COMPUTERWORLD

THE NEWSWEEKLY FOR THE COMPUTER COMMUNITY

Weekly Newspaper Second-class postage paid at Framingham, Mass. and additional mailing offices © 1982 by CW Communications/Inc.

$44/year · August 23, 1982 · Vol. XVI, No. 34

CW 9142 0001 YYMUIVY4 FCWB
UNIVERSITY MICROFILMS
SERIAL PUBLICATIONS
300 N ZEEB RD
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NEWSPAPER

To Happy First Users

S/Online' Bucks End Users

By Lois Paul
CW Staff

SPRING HOUSE, Pa. — As part of an attempt to put more processing power into end users' hands, McNeil Pharmaceutical here became one of the first users of Cullinane Database Systems, Inc.'s on-line application development system, ADS/Online.

McNeil Pharmaceutical, which runs two IBM 4341 systems under MVS with CICS, had been using IBM's DL/1 data base management system (DBMS). "We started looking at user-friendly languages in October 1980," recalled Joe Spink, the firm's manager of data administration, who noted that the goal was to enable users to gain a lot more information without having to go through data processing.

Among the approximately 30 products surveyed were Information Builders, Inc.'s Focus, Mathematica Products Group, Inc.'s Ramis and Software / Adabas.

"In the course of evaluation, we found that n. nonprocedural languages and user-friendly languages were pretty well tied into a data base," Spink said. So the task force began looking more

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•Displayphone Working for Lab

By Bruce Hoard
CW Staff

TETERBORO, N.J. — The first commercial user of Northern Telecom, Inc.'s Displayphone to go public with its experience is well satisfied with the voice/data telephone.

Metpath, Inc. received two Displayphone prototypes late last year. It has had five of them up and running since May and will be receiving 2,000 more over the next 18 months. According to Steve Reid, president of the medical testing laboratory's Computer

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The Displayphone

No Breather After All: Some IBM Fees Rise 9% (But Some Drop, Too)

By Tim Scannell
And Marguerite Zientara
CW Staff

WHITE PLAINS, N.Y. — IBM last week hiked prices by about 9% on its minimum monthly maintenance charges, field engineering and customer service rates, charges for some licensed programs, local program support and Class 1 system control programming and Requests for Price Quotations.

At the same time, the firm also dropped prices by 5% to 25% on the maintenance and support for a number of its machines and features.

While some of the prices go into effect immediately, the bulk will not be effective until next month, December and the beginning of next year. The new pricing affects all of the firm's machines except its high-end 3083 and 3081 mainframes, its 4300 series processors and the 8100 and System/38 minicomputers.

The cost hikes arrived just weeks after industry analysts, pundits and inflation-plagued users breathed a sigh of relief when they noticed the computer giant had not made its usual six-month changes in processor and service prices [CW, July 26].

In fact, when IBM did not raise its prices on schedule — at the same time it reported its second-quarter earnings and reviewed its position in the market — most industry watchers theorized that the firm was either trying to put the squeeze on competitors whose second quarters were not as prosperous as IBM's or that IBM had finally recognized the economy is in a recession and users may not be able to afford high computing costs.

However, last week's price hikes were "not too much of a surprise" to Harry Edelson, an analyst with First Boston Corp. "They've raised rates at six-month intervals for three years in a row." Now, "everybody will raise their rates in accordance with IBM.

"The question is, did something happen at IBM where they changed their minds because they were falling short of budgets or something like that?" he mused. "Maybe it's a sign that things aren't as good as they're supposed to be."

Third-Party Benefits

Analyst Robert Fertig, president of the Greenwich, Conn.-based Enterprise Information Systems, Inc. and an avid IBM-watcher, noted that the recent hikes would not only add more to IBM's coffers, but might also benefit third-party software vendors.

"This is the third price increase for software and software support on selected products in the past year. Clearly, inflation has come down . . . and the move will force customers to the independent software suppliers like Software AG and Applied Data Research, Inc. — especially in the data base and data communications areas," Fertig noted.

Both Edelson and Fertig agreed that while the 9% increase is on the high side of IBM's usual 7% to 10% yearly increase strategy, the firm's earnings

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Software Introduced Last Week

STSC Duo Targets Financial, DP Managers

By Lois Paul
CW Staff

ROCKVILLE, Md. — Addressing the particular problems faced by corporate financial managers and information center managers is the goal of two software products introduced here last week by STSC, Inc.

The first is a Long Range Planning (LRP) system, which STSC describes as a planning system generator rather than a planning language. STSC's second offering is Information Center•Plus, a set of utilities designed to facilitate management of an information center.

STSC's current financial modeling software package is the APL•Plus Financial Planning System (FPS), which is built on the APL language. Brian Smolens, product manager for LRP, explained that LRP is "an entire level of software above FPS. It is a system built to build systems to the specifications of the users."

LRP was designed to support what Smolens called "participative planning." Under centralized control, it allows interactive planning at the lowest required organizational level. LRP also includes logic analyzers that are said to determine if end-user options are acceptable.

The product's features include the ability to handle multiple users and multiple dimensions, controlled access and debt/stock financing. A structural "what-if" capability is said

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Computerworld Extra!

Look for the latest issue of Computerworld Extra! *in your mailbox this week. Titled "The Changing Software Environment," it features a round table discussion on managing your software resources, a new article by Clive Finkelstein (author of the Information Engineering series that appeared in* Computerworld's *In Depth section last year), a conversation with software futurist Charles P. Lecht and the story of a new DPer, which author Jerry Weinberg calls "The Systant."*

Reagan's Data Scheme Blasted as Futile Sham

By Jake Kirchner
CW Washington Bureau

WASHINGTON, D.C. — The Reagan administration's new information classification scheme is a futile sham, the product of secrecy-addicted bureaucrats who fear the light of congressional and public scrutiny, a House of Representatives committee has charged.

The Executive Order on Security Classification not only fails to correct problems of excessive government secrecy, but was promulgated with almost no public participation, the Government Operations Committee said recently, reporting on its inquiry into the handling of the new classification regulations.

"Overclassification of information continues to be a serious problem and . . . the new executive order offers nothing" to address the problem, the committee maintained in its Aug. 12 report. The report also charged that the administration "failed to identify clearly the prob-

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Second-class postage paid at Framingham, Mass., and additional mailing offices PN127420. *Computerworld* (ISSN-0010-4841) is published weekly, except: March (7 issues), June (5 issues), September (6 issues), October (5 issues), December (4 issues) and a single combined issue for the last week in December and the first week in January by CW Communications/Inc., Box 880, 375 Cochituate Road, Framingham, Mass. 01701

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$1.50 a copy. U.S. — $44 a year. Canada, Central & So. America — $110 a year. Europe — $165 a year, all other countries — $245 a year (airmail service). Four weeks notice is required for change of address. Please allow six weeks for new subscription service to begin.

Computerworld can be purchased on 35 mm microform through University Microfilm Inc., Periodical Entry Dept., 300 Zeeb Rd., Ann Arbor, Mich. 48106. Phone: (313) 761-4700. *Computerworld* is indexed: write to Circulation Dept. for subscription information.

POSTMASTER: Send Form 3579 (Change of Address) to Computerworld, Circulation Dept., Box 880, 375 Cochituate Road, Framingham, Mass. 01701.

French President Goes on TV to Announce Development of Antiterrorist Data Base

PARIS — In the wake of France's worst terrorist incident in 20 years — the machine gun raid on a Jewish restaurant that left six people dead and 22 injured — French President Francois Mitterrand announced last week on French television that his country will speed up the development of an antiterrorist data base.

"We have spoken before, and with good reason, of a central data base of terrorism gathered from international sources," Mitterrand said. "This central data base was created last May 24, but it will be put into full effect today [Aug. 17] to speed up our efforts."

The data base already exists in the Police Ministry in Paris, a source in Paris said. In it will reside information from a number of different criminal investigation agencies, including those dealing with border security, terrorism and military security.

Those agencies are the Police de L'air and des Frontieres, the Section of the Direction Centrale de la Police Judiciaire, Section Antiterroriste de la Brigade Criminelle, Services Regional de Police Judiciaire, Direction Generale des Services Exterieurs, Direction de la Surveillance du Territoire, Direction Centrale des Reseignementa Generaux, Securite Militaire and the Groupement D'intervention de la Gendarmerie Nationale.

The data base is being modeled after one now in operation in Austria, a source in the French embassy said. "Two policemen went to Vienna following the incident in the restaurant," he said.

Other antiterrorist measures that will be taken include the creation of a central office to stop the trafficking of weapons and explosives and an increase of officers in three separate arms of the police force, Mitterrand said.

France will continue to offer asylum to individuals wanted for political violence abroad, the president said, despite criticism that this policy has contributed to recent terrorist acts.

NAS Adds Performance Monitors For NAS, 370-Compatible CPUs

MOUNTAIN VIEW, Calif. — National Advanced Systems, Inc. (NAS) has announced a family of performance monitors for use with all NAS and IBM 370-compatible computers.

The NAS Performance Monitors were developed to detect, count, measure and report on every event occurring in large or medium-scale computing systems. They are intended to enable DP managers to control DP costs, including those related to the utilization of both the CPU and devices external to the CPU.

The monitors accumulate totals for the separate internal functions of a computing system and allow an operator or manager to view on-line the status of any system function as the system is running, the vendor explained. This internal process tracking permits the manager to tune the performance of the system.

A manager reportedly can retrieve accumulating event totals to analyze and present data in a format appropriate to any level of technical or financial management. Data can be formatted as charts, graphs, tables and histograms.

Customers can acquire the NAS Performance Monitor under purchase, term or month-to-month agreements. The entry-level price of the package begins at under $15,000 from NAS at 800 E. Middlefield Road, Mountain View, Calif. 94040.

Corrections

American Management Systems, Inc. is not a subsidiary of Martin Marietta Data Systems ["MCI Closes Virginia Center, Lays Off 18% of DP Staff," CW, Aug. 16]. Martin Marietta did purchase American Management Systems' IBM data center in January and was the service firm managing the MCI site in Rosslyn, Va.

Judith M. Bastian was incorrectly identified as the DP head of Brunswick Corp. in "DP Shops Feeling Recession Pinch" [CW, Aug. 9]. Her correct title is manager of information processing. In the article, her name was misspelled as Bastion.

The announcement of Applied Data Research, Inc.'s (ADR) Cadre user group meeting [CW, Aug. 9], which will be held Sept. 19-23 in Dallas, included the address of the former Cadre chairwoman for inquiries about the conference. Instead, registration materials can be obtained from Karen Gardner, ADR's Cadre director, at ADR headquarters, Rt. 206 and Orchard Road, CN-8, Princeton, N.J. 08540.

Lease prices on IBM's System/38 processors were changed as *Computerworld* went to press with its Hardware Roundup [CW, Aug. 2]. The lease price for a 768K-byte System/38 Model 4 is now $2,548/mo on a three-year plan. A 2M-byte Model 5 processor now leases for $4,949/mo on a three-year plan.

In addition, the correct purchase price of a 2M-byte Model 5 processor is $118,620.

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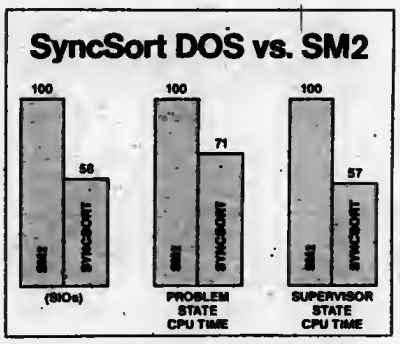

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Defendants Say IBM Trade Secrets Not Secret

By Jeffry Beeler
CW West Coast Bureau

SAN FRANCISCO — Lawyers representing three defendants in the IBM trade-secrets theft case have challenged the prosecution's contention that the targets of the attempted technology heist were genuinely confidential.

IBM's Adirondack Hardware Design Workbooks and other objects of an alleged Japanese plot to steal U.S. high technology have already found their way into the "public domain" and thus hardly qualify as trade secrets, the defense attorneys maintained.

One place where the supposedly secret documents have long been available to non-IBM scrutiny is National Advanced Systems, Inc. (NAS), according to court motions filed on behalf of defendants Tabassom Ayazi, Raymond Cadet and Barry Saffaie. Both Cadet and Saffaie are former NAS employees.

The motions, filed here recently in U.S. District Court, identified four high-ranking NAS executives who reportedly had access to some of the same IBM technical documents that were allegedly sought by the Japanese. "Knowledge and use ... of the IBM documents ... permeated the highest corporate ranks of NAS," one motion said, and was so "widespread" that access to the materials became the subject of an "internal feud."

None of the four NAS executives has ever been accused of any wrongdoing in the case — a fact defense attorneys are trying to portray as legally inconsistent with the charges against Cadet and Saffaie.

Defense lawyers are also advancing at least two additional arguments in an attempt to undermine the prosecution's case against their clients. First, the attorneys have accused IBM of controlling the Federal Bureau of Investigation "sting" operation that eventually resulted in criminal indictments against the three defendants.

Second, the defense is trying to refute the prosecution's claim that the IBM product information in question is worth more than $5,000. For the defendants' alleged theft efforts to qualify as a federal crime, the value of the targeted documents would have to exceed $5,000.

All the attorneys' arguments are outlined in a series of defense motions that were filed here just one day before a federal judge in nearby San Jose, Calif., handed down two key rulings in the IBM trade-secrets theft case. In one ruling, Judge Robert Aguilar ordered the prosecution to make available to the defense any information about IBM's role in the FBI's undercover investigation.

The information is being sought in an apparent effort to bolster the defense's repeated claims that IBM "guided" the federal government's operation and is more concerned with squelching Japanese competition than with protecting confidential technology.

Aguilar's ruling will give defense attorneys an opportunity to inspect the personnel files of undercover agent Richard Callahan, a former IBMer who was instrumental in the government's investigation of the alleged Japanese theft attempt.

Second Ruling

In a second ruling, Aguilar postponed the start of the Ayazi-Cadet-Saffaie trial from Sept. 7 to Oct. 18. A delay had long been sought by defense attorneys, who have complained about not having enough time to familiarize themselves with the trade-secrets theft case and its complexities.

Aguilar's rulings came during an hour-long court hearing, which he also used as an occasion to caution lawyers against publicizing the case in the press. "You're going to have to be careful, or I'm going to have to rein you in," he warned.

Although Aguilar voiced concern about the attorneys' recent comments to reporters, he stopped short of imposing a gag order, which he claimed to have seriously considered.

The upcoming trial of Ayazi, Cadet and Saffaie constitutes only one small facet of a much larger industrial espionage case in which 21 suspects have been indicted for participating in a scheme to steal IBM trade secrets. Also indicted in the case are two major Japanese electronics companies — Hitachi Ltd. and Mitsubishi Electric Corp.

Together, representatives of the firms are alleged to have paid $648,000 in an effort to obtain purportedly confidential IBM technology, including the Adirondack workbooks and information about the industry giant's Extended Architecture. The payments allegedly went to FBI undercover agents posing as shady electronics dealers.

Pharmacy Firm Prescribes 'ADS/Online'

(Continued from Page 1)

specifically at data base packages that included provisions to increase both DP and end-user productivity. That narrowed the field to Cullinane's Integrated Data Management System (IDMS), Adabas and Infodata, Inc.'s Inquirel. The task force used DL/1 as a basis for comparison.

"It was almost a neck-and-neck horse race between Adabas and IDMS," Spink said. "We felt that from an operational point of view, IDMS would be better to support our operation specifically, as opposed to the inverted list type that Adabas has."

Another consideration that tipped the scales in favor of Cullinane's offering was the future availability of ADS/Online and its Online English query facility.

McNeil signed an agreement with Cullinane in the spring of 1981 to install IDMS, with the provision that it would become a beta test site for ADS/Online. This component of the IDMS-1982 product was installed for beta testing at McNeil last October.

The production applications that have been developed using ADS/Online are accounts receivable and customer maintenance systems. The move to IDMS-1982 was not a 100% conversion. "There was a complementary project at the same time," Spink explained, and the on-line cash application was an implementation of a system that was half-converted. However, the credit inquiry and update system was developed and installed using ADS/Online.

The systems were designed to provide on-line inquiry and update to a fully integrated IDMS customer data base that contains customer, credit, receivables, sales and product data, a apokesman said.

Spink would not characterize the switch from DL/1 with CICS to IDMS with IDMS-DC and ADS/Online as a conversion because the structure of the data base was different. "If you went back to the system design, it was not in any sense a line-by-line conversion. The users ended up with what they had, but the insides were a little different."

There has been a productivity increase since the change was made, he said. For one thing, "it does not take someone as long to become as familiar with ADS/Online as it would take for mapping of CICS." In this way, McNeil programmers have become productive much more quickly.

"Another aspect of it is that it is so easy to develop the dialogues and the associated processes very quickly," he added.

Because of the time frame required for the installation of the new DBMS, McNeil Pharmaceutical contracted with Information Tectonics, Inc. of Cherry Hill, N.J., to handle one portion of the conversion while it was an ADS/Online beta test site. Information Tectonics "was here purely as a consultant," Spink noted, adding that "the job it did was a very good job."

According to Spink, the move to the Cullinane product did not present McNeil Pharmaceutical with unusual problems. "One thing I think was commendable on Cullinane's part is that once they realized that we were really trying to put up a production system with their product, they extended the additional support needed," he said.

Although beta test sites for new software often run pilot projects, McNeil was waiting for ADS/Online to begin development on the accounts receivable "conversion," the credit update and inquiry application and the customer sales retrieval system, he explained. "As soon as that product came in-house, we were using it to shake the product out and get the work done."

The accounts receivable system has been operational since April 1; the sales reporting system was brought up May 1; and the first part of the literature update and retrieval system was up and running July 1.

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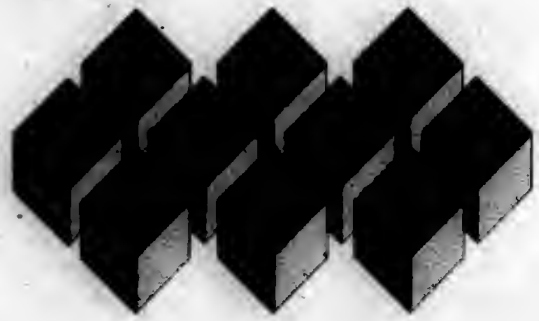

Even Though Some Say It's Illegal

IRS Using Its Computers to Help Enforce Draft

By Jake Kirchner
CW Washington Bureau

WASHINGTON, D.C. — The Internal Revenue Service has begun using its computer systems to help enforce military draft registration, even though legal opinions from Congress, privacy advocates and the tax agency itself suggest the IRS plan may be illegal.

Despite self-professed fears that it may eventually be liable for large fines for helping the Selective Service remind suspected registrants of the draft law, the IRS has already mailed out the first batch of letters that will eventually notify hundreds of thousands of men that they may be prosecuted if they do not sign up for the draft.

Initially, the Selective Service will not have access to the IRS-held addresses of those men, on which basis the tax agency argues it is not, at this time at least, disclosing personal tax record information. A House of Representatives subcommittee had tried to persuade the IRS that the enforcement program is outside the tax administration responsibilities of the agency and could eventually constitute an unwarranted privacy invasion of those young men whose tax files will provide the addresses for the mail-out operation [CW, Aug. 9].

The panel, the Government Operations Subcommittee on Commerce, Consumer and Monetary Affairs, also took the IRS to task for helping the Social Security Administration (SSA) put into effect a program in which SSA is asking millions of benefits recipients to grant the agency access to their tax records to verify eligibility.

Subcommittee Hearing

At a subcommittee hearing on these matters Aug. 10, critics of the programs, including the American Civil Liberties Union and the National Senior Citizens Law Center, called these uses of IRS records illegal and significant invasions of personal privacy. The subcommittee also obtained legal opinions on the programs from the American Law Division of the Library of Congress Congressional Research Service (CRS), which largely supported those contentions.

The CRS opinions questioned the propriety of IRS releasing its files to SSA, noting — as have opponents of the eligibility checking program — that access to the computer files is possibly being coerced from recipients who fear their Supplemental Security Income checks will be stopped if they do not sign a consent form.

Draft Assistance

In the matter of assisting the Selective Service, the CRS did not question the IRS decision to mail out the letters to nonregistrants because a standing IRS regulation allows such activities on behalf of other government agencies if paid for by those agencies. The opinion noted, however, that the IRS plan gets into trouble when it includes turning over to the Selective Service the addresses of those letter recipients who still do not register.

Tax laws, the CRS said, provide for "the confidentiality of returns and return information, including taxpayer identification information." The law "seems clearly intended to provide access [to IRS files] where the suspected criminal has been cleary identified and not as a general investigatory tool," which is exactly what is being sought in the Selective Service program, the CRS said.

The IRS could be liable for illegally disclosing taxpayer information if it eventually turns over to the Selective Service the addresses of those the service suspects have not registered. Civil fines of $1,000 per disclosure could be levied against the IRS, a prospect that has the agency sufficiently worried that it has agreed to disclose only 200 such addresses, randomly chosen.

Interagency correspondence concerning the program indicates that the IRS intends to discuss the matter with the Justice Department even as it continues mailing monthly batches of registration reminders for the Selective Service. The limit of 200 address disclosures will keep the IRS liability down, the IRS feels. But it will do nothing for the Selective Service, which must have access to the addresses of all nonregistrants if its enforcement program is to be at all effective.

Reading List Covers Computer Law

LOS ANGELES — The Law & Technology Press has announced the second edition of the *Computer Law Reading List*, an anthology of reviews of selected periodocials, monographs, treatises and books on computer, telecommunications and information law.

The reading list was compiled by Michael Scott, publisher of *The Scott Report* and *Software Protection*.

The reading list costs $25 from the Law & Technology Press, 3500 S. Figueroa St., Los Angeles, Calif. 90007.

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COMPUTER ASSOCIATES

FBI 'Stings' Engineer Trying to Sell Formula

By Marcia Blumenthal
CW Staff

LOS ANGELES — A former Burroughs Corp. employee who allegedly threatened to sell a proprietary formula to Japanese vendors unless Disk Media, Inc. (DMI) paid him $113,000 was arrested in a sting operation here Aug. 13 by special agents of the Federal Bureau of Investigation and charged with extortion.

Ira F. Gassman of Granada Hills, Calif., identified in a U.S. Justice Department affidavit as a project engineer employed by Burroughs since late 1981, was assigned by the Detroit mainframer to work at DMI in February or March of this year until his termination in July. No reason was given for Gassman's termination by Burroughs.

DMI, a joint venture started by Memorex Corp. and Control Data Corp. last March, develops and manufactures a magnetic disk coating for rigid disks. Memorex became a wholly owned subsidiary of Burroughs last year.

According to the affidavit, Gassman contacted John Morrison, a CDC vice-president, on Aug. 5. He told Morrison that security at DMI was lax and that he had the "DMI formula" for disk coating.

Morrison asked Gassman what he wanted in exchange for the formula. Gassman was evasive about what he wanted in exchange for the formula and gave Morrison a telephone number for a subsequent contact.

Two days later, after the parties involved reported the incident to the FBI, Morrison, apparently acting under the agency's instructions, called Gassman. During the ensuing conversation, Gassman said the formula had been given to him and that he did not steal it, according to the affidavit.

A DMI official later told the FBI that Gassman had been given a portion of the formula as part of his assignment at DMI.

Details of Transfer

Gassman allegedly told Morrison he wanted $75,000 to $80,000 for returning the formula. During this conversation, Gassman allegedly discussed the details of the transfer of the funds, noting that they were to be placed in an escrow account with his attorney, later identified as Jack Diamond of Sherman Oaks, Calif. Gassman told Morrison his attorney had advised him to "be sure this was not a sting operation," the government document said.

On Aug. 9, Morrison again contacted Gassman. During their conversation Gassman allegedly read him the basic steps of the formula. Morrison, a physicist by training, said the steps were logical and believed Gassman was in possession of the formula developed by DMI.

During this exchange, Gassman told Morrison two other people were involved in the operation and that "he had been told to increase the demand for the return of the formula to $113,000," the affidavit said. Gassman said he "had been discussing the sale of this formula to two Japanese companies, Hitachi Ltd. and Mitsubishi Electric Corp." According to the affidavit, "Morrison said it was clear to him these companies would have a use for the formula . . . and agreed to the terms for the return of the formula."

Hitachi and Mitsubishi currently stand accused of illegally obtaining IBM trade secrets, which were discovered through an elaborate FBI undercover investigation [CW, June 28].

The affidavit did not indicate whether the Japanese companies named were actually contacted by Gassman or whether they had expressed interest in the information. Mitsubishi and Hitachi could not be reached for comment by press time.

On Aug. 12, Morrison, Fred L. Mishler, a Memorex project manager, and FBI Special Agent Tom Carl, acting in an undercover capacity, met Gassman at Denny's restaurant in Sherman Oaks. Gassman produced three pages of the formula he was trying to sell, and Mishler said they appeared to be part of the DMI formula, the affidavit reported.

After Morrison showed Gassman a check for $113,000, the group proceeded to the office of Gassman's attorneys. There FBI agent Carl asked Gassman to step into a hallway, where he was placed under arrest by waiting FBI agents.

Gassman was released on his own recognizance after posting a $10,000 personal bond. If convicted, Gassman could receive two years' imprisonment, a $500 fine or both.

Shortly after his arrest, a civil suit was filed against him by DMI and Memorex. A Los Angeles judge has issued a restraining order requiring Gassman to return any documents he has pertaining to the matter and to refrain from further dissemination of the material, a Memorex spokesman said.

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No Significant Problems, Reports Dataphone User

(Continued from Page 1)

Services Group, there have been no significant problems.

Metpath receives medical specimens from approximately 30,000 patients each evening. The test results are transmitted to 55 branch locations throughout the U.S. and from there by courier to the attending physicians' offices.

The firm's goal is to place Displayphones in client physicians' offices. The clients could then access not only account test information and results, but additional clinical and office management information as well.

Like any telephone, the Displayphone can be used for voice communications. What sets it apart is its retractable keyboard, built-in 7-in. screen and modem used for accessing, displaying and communicating data and graphics over standard telephone lines.

The unit also provides such enhanced telephone functions as automatic dialing and redialing of the last number called. Other features include a built-in speaker, digital clock and built-in timer that notifies the user how long he has talked.

Metpath has installed its Displayphones at remote users sites so far. Over the next nine months it will supplant most of the IBM 3101 CRT terminals now in the field without losing several 3101 features, Reid said.

However, some 3101s will be retained because they are more appropriate for hospital laboratory use than the lighter, portable Displayphones. Both the 3101 and Displayphone are capable of data rates of 300 and 1,200 bit/sec, Reid said, noting that the Displayphone requires an upgrade to achieve the 1,200 bit/sec rate.

The general reaction of Displayphone users has been one of "considerable enthusiasm," Reid said. "What users like most about it is its convenience. Its second most popular feature is its compactness."

Asked what users liked least about the new product, Reid replied that some users think 300 bit/sec is too slow a transmission speed. He had no other complaints, but said it would be normal to expect more problems with 2,000 units than with five.

Other prototype users have expressed dissatisfaction with the Displayphone's ability to store enough digits for private branch exchange (PBX) enhanced services, but Reid said his firm had run the units through a Bell Dimension PBX without any such problems.

The other users also expressed concern about the retractable keyboard, saying it was awkward and unstable. Reid, who said Metpath users are not using the device for extensive typing, does not see that as a problem.

Despite the relatively small 7-in. screen, characters are easily readable even in the 80 char./line mode, he added.

According to Reid, the device is user-friendly, prompting first-time users through a step-by-step introduction to its various features.

McCormack & Dodge To Host User Meet

NEW ORLEANS — McCormack & Dodge Corp. will host its 1982 Users Conference here Sept. 12-18. Keynote speakers at the event will include Louis Rukeyser, host of television's *Wall Street Week* and managing editor of *Fortune* magazine; and John B. Landry, senior vice-president of research and development at McCormack & Dodge.

The conference will also feature industry exchange sessions and a product information center.

Registration for the meeting costs $510, McCormack & Dodge said from 560 Hillside Ave., Needham Heights, Mass. 02194.

Allegedly Manipulated Computer

Ex-Bank Supervisor Charged With Embezzling

By Jim Bartimo
CW Staff

BOSTON — John S. Daly Jr. was indicted by a federal grand jury late last month on charges that he embezzled some $30,000 from the Bank of New England here. Daly allegedly manipulated the bank's computer while working in his position as supervisor of the Proof and Control Section of the Corporate Agency Department between July 1977 and August 1979.

Daly was also arrested by the Federal Bureau of Investigation, but was released on bail. He could not be reached for comment.

Explaining the scheme, the five-count indictment said, "The bank provided various custodial and shareholder record keeping for a number of investment companies. Investment companies sell shares in their company to investors, who then become shareholders. The companies invest the proceeds in an effort to earn a high rate of return on the funds."

Daly's section was responsible for reviewing the records of investment companies and their sale of shares to investors, according to the indictment, which said a computer was used to correct imbalances between shareholders' records and other records..

'Double-Books Situation'

"It was a 'double-books situation,'" a spokesman for the Bank of New England (formerly New England Merchants National Bank) said. "There was a discrepancy between the number of shares on the books and the number outstanding.

"Our DP people are pretty adamant that it was not a computer problem," he added. "They feel that neither the harware nor the software is to blame — that it was strictly a bookkeeping problem."

The indictment maintained that Daly "used the computerized record-keeping and correction system to conceal imbalances in shares and divert these shares, or the proceeds thereof, to himself without leaving an audit trail." He allegedly diverted the funds in a number of different ways.

Tudor Hedge Fund

Shares from the Tudor Hedge Fund investment company worth $20,000 to $24,000 were diverted when Daly changed one shareholder's account number to his own, the indictment said.

Some $1,100 of assets and securities in the Bancroft Convertible Fund were diverted when Daly reportedly substituted his own name for that of a Bancroft shareholder.

By transferring dividend checks from a ficticious account, Daly diverted $5,000 in assets from Constitution Fund, Inc. to his own account, the indictment said.

"It was an isolated incident," a Bank of New England spokesman said. "We've taken precautions and would be very surprised if it happened again. Because it happened three years ago, it's considered ancient history here."

. . . And Next Day, He Went Back to Work

BOSTON — Indictment by a federal grand jury and arrest by the Federal Bureau of Investigation last month for alleged participation in a computer scam did not prevent former Bank of New England supervisor John S. Daly Jr. from returning to his job as tax auditor in the Massachusetts Department of Revenue.

Daly, who began working in a local branch of the Department of Revenue on March 23, 1981, was not terminated until two weeks after his indictment, according to department spokesman Robert Sherman.

The FBI did not inform the Department of Revenue of Daly's arrest. "We wouldn't do that under any circumstances," FBI special agent Lawrence Gilligan said last week. "We publish the arrest in the paper, but we wouldn't notify his employer. I don't think it's any [agency's] responsibility to do that."

Eighteen months before joining the Department of Revenue, Daly left his position at the bank voluntarily, "before all this came down," a bank spokesman said.

"We checked back in our records," the spokesman said, "and we have no record of the Department of Revenue asking for a reference."

It was not until *The Boston Globe* published a report in January of a Securities and Exchange Commission civil suit against Daly and five others that Daly's possible involvement in the computer scam became public knowledge. Although the civil suit was made public in January, Daly continued to work in the revenue department. The department is now the subject of a current Suffolk County grand jury investigation.

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STSC Software Backs Financial, DP Managers

(Continued from Page 1)

to allow users to redefine their system automatically by changing the organizational structure and accounting logic. According to Smolens, this enables users to reorganize relations, rather than merely to change a constant.

LRP provides preprogrammed standard accounting relationships, a standard chart of accounts and eight predefined standard reports. All of these may be modified. The package also provides customized work sheets for historic and plan data input. Other features are the automatic generation of on-line documentation and fully prompted or user-defined forecasting.

The software has completed beta testing and is currently available for use on STSC's APL*Plus time-sharing network. The firm eventually plans to offer LRP as a separate software package.

STSC's Information Center*Plus package was designed to provide the tools needed to manage the growing number of information centers. It is intended for use on IBM 370, 4300 and compatible systems in conjunction with VS APL under the VM operating system with CMS.

The foundation for Information Center*Pius is STSC's APL*Plus/1140 system, which is based on its proprietary enhancements to IBM's VS APL product. Among these are the Sharefile System, a secure shared file manager.

Information Center*Plus consists of a backup system, a billing system, a capacity and performance evaluation capability and enhancements to IBM's A Departmental Reporting System (ADRS.)

Fastback System

The Fastback System is a set of utility programs intended to provide a flexible backup mechanism for CMS files in the IBM VM/CMS environment. According to Albert Behar, vice-president for system development for STSC, this facility provides a full and incremental dump, as well as full and incremental retrieval. He also noted it has been used for some time via STSC's remote computer service.

The Billing and Chargeback System was designed to track and report the computer resources used by each user. It is a parameter-driven system, Behar noted, that was designed to recognize the variety of ways of accounting for use of resources.

The Capacity Planning and Performance Evaluation System includes a daily projection model, a least squares projection model and a seasonal projection model. It is intended to help the information center manager interpret the data produced by IBM's VM/CMS performance and capacity evaluation tools. Reports provided by the software were designed to help predict future load.

The fourth component is the ADRS-*Plus System, which Behar described as an enhanced version of IBM's ADRS-II. The primary feature of this tool is performance, according to Behar, who said that an initial beta site showed an upward of two factor of performance improvement. He noted that no conversion is necessary for use of this product.

Information Center*Plus has been tested at two sites, according to Behar. It is targeted for availability in mid-September. The one-time perpetual license fee for the product is $25,000, with an additional $3,750 required for annual support and maintenance and a $2,500 optional on-site installation fee. The monthly license fee for the product is $1,250.

STSC is headquartered at 2115 E. Jefferson St., Rockville, Md. 20852.

Reagan Scheme Blasted as Futile Sham

(Continued from Page 1)

lems with security classification rules that the new order was intended to solve . . . [and] failed to explain in a satisfactory manner the purpose of the changes that were made."

The secrecy rules were issued April 2 amid considerable controversy stemming from charges in Congress that the public was not given enough opportunity to comment on the proposed classification changes and that the new order would lead to more government secrecy and possibly federal attempts to classify private-sector data, particularly concerning advanced technology [CW, April 12]. Although some changes to the order were made to mollify its critics, the administration was still charged with failure to allow more congressional input into the drafting of the executive order, which was seen by some members of Congress as reflecting a "when in doubt, classify" philosophy in contrast to previous classification orders that had moved historically toward less government secrecy.

Rep. Glenn English (D-Okla.), chairman of the Government Operations Subcommittee on Government Information and Individual Rights, which held hearings on the executive order earlier this year, was particularly critical of the new regulations. Last week he issued a statement blasting the administration for its handling of the matter.

"The Reagan administration," he said, "was reluctant to tell the Congress and the public about its plans to revise the security classification rules, and it still hasn't explained in a satisfactory way why some of the changes were made.

"Now that we have studied the new order, I can understand why." English continued. "The Reagan order marks a return to the days when 'national security' was used by bureaucrats and politicians to hide errors, mistakes and waste. It is part of a pattern of Reagan administration efforts to cut back on the public's right to know what is going on in the government."

The administration, for its part, strongly defended the order before the subcommittee as not a radical departure from previous secrecy regulations and said it would not increase the number or types of government documents classified [CW, May 10].

The Government Operations report, which detailed the findings of the English panel, said, however, that "unless new action is taken to control overclassification, the new order is likely to make matters worse because it gives classifiers vaguer guidelines, fewer restrictions and unnecessary additional classification authority."

The report concluded that, "given the past abuses of classification authority and the consistent pattern of overclassification by the executive branch, the committee is not optimistic that classifiers will apply the new classification authority with restraint."

The committee recommended the administration "develop and apply new methods of preventing overclassification and of limiting abuse of the classification authority" in the new order. It called for the administration to report back to Congress on these efforts no later than Sept. 30, 1983.

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DSS Forum Set For November

NEW YORK — "Evaluating Decision Support Software: A Managerial Perspective" is a one-day forum that will be held Nov. 1 and Nov. 2 at the Grand Hyatt Hotel here.

The is intended to help top-level managers evaluate and select decision support software (DSS) packages and reportedly will focus on the problem of DSS end-user characterization, problem diagnosis and needs assessment, as well as the organizational implications of the evaluation and selection process.

Among the speakers at the conference will be Peter G.W. Keen, Michael S. Scott Morton and C. Lawrence Meador from MIT. Warren G. Briggs of Suffolk University in Boston will chair the program.

The registration fee for the seminar is $495. Further information can be obtained by contacting DSS Conference, 215 First St., Cambridge, Mass. 02142.

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SSFS CW8/23

IBM Restructures Prices; Some Rise 9%, Others Fall

(Continued from Page 1)

would have remained healthy even without the recent price jump.

Examples of some of the increases noted in IBM's 16-page notice include:

• A jump in the hourly per-call service rates from $93 to $101, $115 to $125 and $126 to $137 for the firm's Class I, II and III products, respectively. Class I machines include such items as keyboards while Class III covers its central processors.

• An increase in off-hour hourly service calls from $108 to $117 for Class I machines, $135 to $147 for Class II machines and $145 to $158 for Class III machines.

• Increases in the basic license fees for licensed programs. These include a jump from $330 to $359 for the Virtual Memory Systems Product (VM/SP), from $247 to $269 for IBM's Distributed License Systems Option and from $1,150 to $1,250 for the direct-access storage device migration aid.

• A rise in monthly local programming support charges. For instance, the charge for the firm's VM/SP was increased from $50/mo to $55/mo, while support for multiple VM/SP products rose from $80/mo to $88/mo.

Decreases listed in the announcement include:

• A drop in the 370/168 computer's minimum monthly maintenance fee from $5,055 to $4,300.

• A decrease in the minimum monthly maintenance fees for the 3033 processor of $5,520 to $4,970 for the entry-level version and from $5,505 to $4,955 for the hight-end model.

• A reduction in the System/34 minicomputer's minimum monthly maintenance fee from $159 to $136 for the entry-level system and $464/mo to $395/mo for the high-end F37 model.

For 3033, a Warehouse Sale

RYE, N.Y. — While IBM last week hiked prices with one hand, it held a warehouse sale with the other. The firm has announced price cuts on some processors, memory enhancements and selected features for its 3033 line of mainframes.

Prices on memory upgrades within a model group on all but the entry-level processors in each of the 3033 mainframe classes have been cut between 2% and 14.5%. In addition, 2M- and 4M-byte memory enhancements have been cut 52% and 62% to $32,000 and $64,000, respectively, a spokesman said.

IBM also cut prices on selected features and Requested Price Quotations for the 3033 line. Price cuts range from 20% to 35% with features like the 3033 Extension Feature and Extend Control Storage features receiving the largest reductions. IBM extended channel features for the 3033 line were reduced by 20%, IBM said.

The price changes go into effect immediately, IBM said. The 3031 and 3032 processors were not included in the price cuts.

Asked about the price cuts, one analyst, International Data Corp.'s Jack Hart, theorized that IBM wants to sell off all its 3033 inventory. IBM has been trying to sell off as many 3033 processors as possible before the residual values of those systems drop, Hart said.

Managers On the Move

GARY W. GARVER has been designated manager of data processing technology for ESL, Inc. in Sunnyvale, Calif. His duties will include managing telecommunications and the ESL Systems Programming Group.

Garver joined the company in 1979 as application programming manager. He was formerly the manager of data center operations for Danner's, Inc.

He attended Indiana University and graduated with a B.A. degree in business.

•••

TY J. TABERNIK has been selected director of corporate systems for Republic Automotive Parts, Inc. in East Detroit, Mich. He will coordinate all data processing development and implementation within the corporation.

Before joining Republic, he served as a group manager in the General Systems/Management Information Systems Department of F. Joseph Lamb Co., where he was responsible for sales and administrative systems programming, general systems and procedures and engineering computer applications. Earlier, as manager of corporate systems, he was responsible for management of systems analysis.

Prior to joining Lamb, he was a staff methods and systems analyst at Ford Motor Co.

Tabernik attended Indiana University and majored in business administration. He is a member of the American Management Association and the Association for Systems Management.

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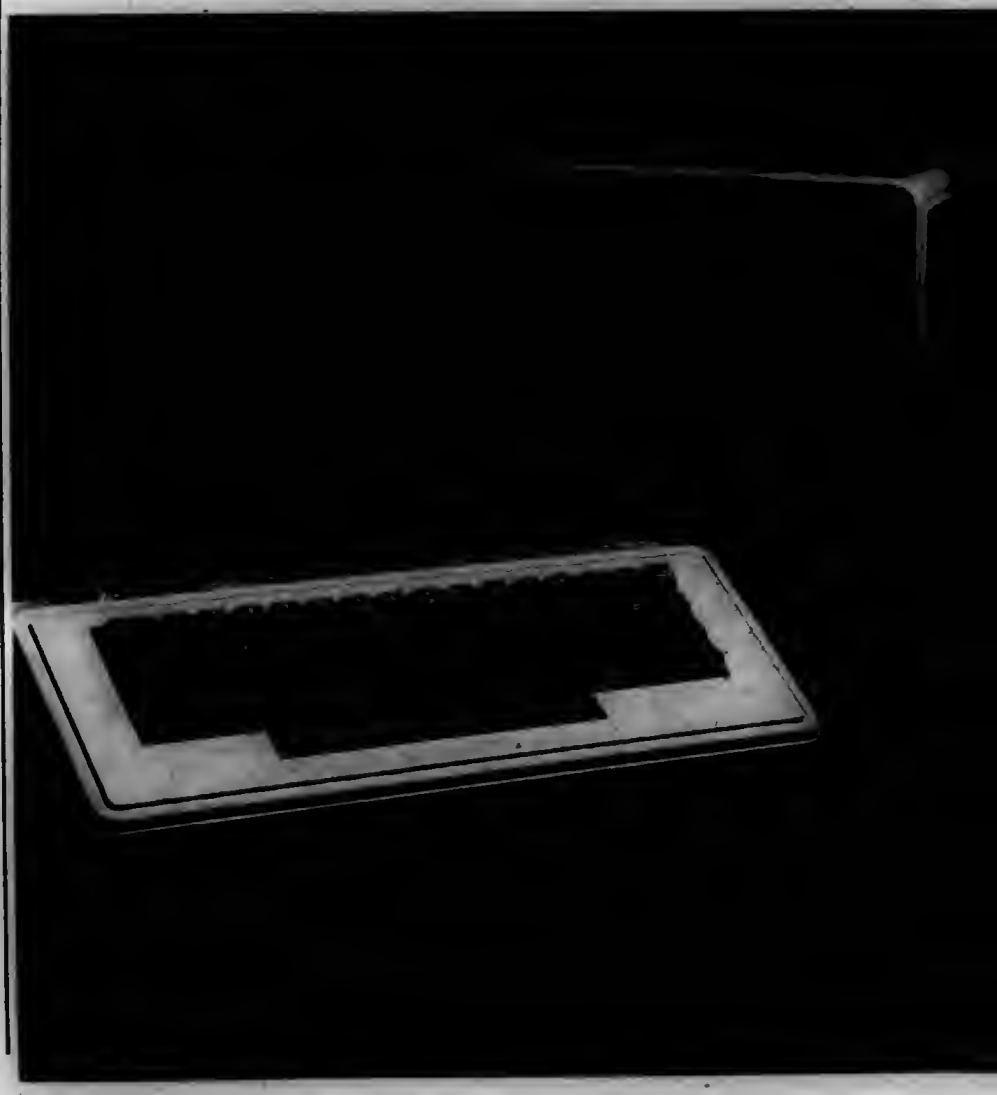

Major Bell Issue Left Unanswered by Greene

By Phil Hirsch
CW Washington Bureau

WASHINGTON, D.C. — One major issue left unanswered by U.S. District Judge Harold H. Greene earlier this month when he accepted the settlement ending the U.S. vs AT&T antitrust suit [CW, Aug. 16] is whether the phone company will be required to offer unregulated communications services through a separate subsidiary. The issue is a vital one for both communications users and Bell's competitors.

In his 178-page decision, Greene pointed out that "the key to the Bell system's power to impede competition has been its control of local telephone service ... With the loss of control over the local network, AT&T will be unable to disadvantage its competitors, and the restrictions imposed on AT&T [in 1956] after the government's first antitrust suit — which limited [Bell] to the provision of [regulated] telecommunications services — will no longer be necessary."

The latter part of this statement was questioned here last week because, as one source put it, "Judge Greene devoted a good deal of attention to the matter of competition among long-distance communications carriers, but he seems to have neglected a key point."

On Page 68 of his opinion, Judge Greene said that "virtually all those who suggest that restrictions beyond those in the proposed decree be imposed on AT&T ... claim ... AT&T

Analysis

still possesses monopoly power in the interexchange market and that it will leverage this power by cross-subsidizing its competitive services with monopoly revenues ... The validity of these arguments depends ... upon the soundness of the claim that after divestiture [of the Bell operating companies] AT&T will still possess monopoly power in the interexchange market."

While there can be "no doubt" that AT&T's present share of this market is high, Greene continued, "the overriding fact" is that control of the Bell operating companies has been the "principal means" by which AT&T has "maintained monopoly power in telecommunications." As a result, he pointed out, AT&T has been able to impose discriminatory interconnection restrictions on its competitors and has been able to cross-subsidize its competitive services with revenues earned from local exchange offerings.

By severing the connections between Bell and the operating companies, however, both of these activities will be prevented, Greene contended. "The divestiture ... will thus remove the two main barriers that previously deterred firms from entering or competing effectively in the interexchange market" and probably lead to an increase in the number of interexchange carriers.

However, if the supply of independently owned and operated transmission facilities remains limited, competition will not keep Bell honest, since "the user will have no place to go if the phone company decides to raise its charges for long-distance voice/data/information services," according to a veteran communications attorney who asked to remain anonymous.

Subcommittee Report

Late last year, the staff of the House of Representatives' Telecommunications Subcommittee released a voluminous report on competition in the telecommunications industry [CW, Nov. 16]. One of its conclusions was that the number of suppliers serving a particular communications market is not really important; the key indicator of competition is the extent to which substitute communications facilities are available.

The report also concluded that the long-distance communications market "is not now effectively competitive," nor is it likely to become "fully competitive" during the 1980s.

In H.R. 5158, the rewrite of the Communications Act of 1934 that died in the House Commerce Committee last month [CW, July 26], an attempt was made to deal with this problem by requiring the phone company to offer all its long-distance services through a separate subsidiary. But Greene said such a subsidiary is "unwarranted." He maintained that "AT&T's opportunity for cross-subsidization will become increasingly curtailed as interexchange competition increases."

AT&T has vigorously opposed the separate subsidiary idea — both the one proposed in H.R. 5158 and the one incorporated into the Federal Communications Commission's Second Computer Inquiry Decision. It appears likely, as a result of Greene's remarks, that the phone company will now rejuvenate its campaign to alter the Computer II Decision.

Although the Second Computer Inquiry Decision requires such a subsidiary, it also contains a waiver clause allowing regulated carriers such as AT&T's Long Lines Division to offer "enhanced" services under certain conditions.

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Other actions such as Manual Dial, Change Directory, Setup, and On Line are also shown on the main menu. These, too, may be selected by the user with a single keystroke.

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Grand Masters Put Computers in Checkmate

PITTSBURGH, Pa. — The Fredkin Prize competition ended in checkmate again when programmers failed to baffle and bedazzle area chess experts for the big bucks.

The final score of the event was Humans 9, Computers 5.

Established in 1980 by Edward Fredkin of MIT, the annual event was held at Carnegie-Mellon University last week, concurrent with this year's National Conference on Artificial Intelligence. The $100,000 booty once again went unclaimed because computer programs in the competition still could not foil a human world grand master of chess.

The computer programs in the 1982 competition hailed from Bell Laboratories, the University of Southern Mississippi, Northwestern University and Duke University.

While Bell Labs' Belle chess program was the most successful mechanical challenger last year, the Nuchess program developed by Northwestern University fared best this year, according to David Lewin, director of science and technology information at Carnegie-Mellon.

Nuchess runs on a Control Data Corp. Cyber 175 computer system.

Asked whether computerized chess programs would eventually be able to whip human competition consistently, Lewin conceded that it will probably happen. He added, however, that he thinks humans will win for at least the next 10 years.

He noted, however, that a computerized backgammon program has been beating human backgammon grand masters since 1979. The backgammon program was developed by Hans Berliner, a senior research computer scientist at Carnegie-Mellon and overseer of the Fredkin competition.

Water Switch 'Cooks' Mainframe At Edison

BOSTON — Greater Boston residents who had questions about Boston Edison Co. electric bills may have been turned off last week when the utility's main computer overheated and shut down information access to several remote customer service centers.

The air-conditioning unit at the company's Prudential Center DP site reportedly malfunctioned after the City of Boston switched the skyscraper's water supplies, and the computer room got too hot to operate. This caused on-again, off-again operations that lasted from Monday, Aug. 9, through Friday, Aug. 13, when the unit was finally restored.

According to Boston Edison's public information representative, Priscilla Korell, the air-conditioning breakdown did not affect customer billing, but did impact access to customer and billing cycle information.

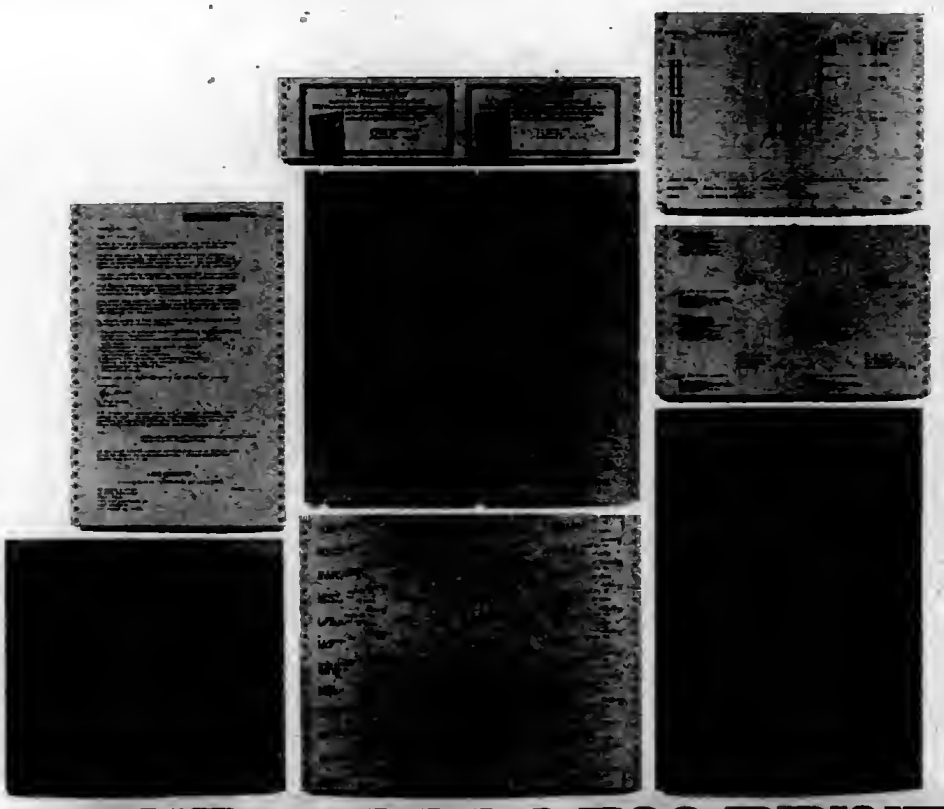
The terminal-control equipment affected included the wiring and connections to the utility's main computers, according to Korell, who would not disclose the specific computer models running at Boston Edison.

User Directory Out on Univac

DALLAS — Unisphere Publishing Co. has announced plans to publish its first annual "Directory of Software and Services" for users of Sperry Univac systems.

Included in the directory will be application and system software packages for the 1100 series, 90 series (OS/3 and VS/9), System 80, BC/7 and Cade.

The directory costs $50 and includes a one-year subscription to the monthly *Unisphere, The Magazine for Univac Users*. Unisphere can be reached at P.O. Box 38085, Dallas, Texas 75238.



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Amendment Would Keep Foreign Tech Grads in U.S.

Washington Update

By Jake Kirchner
CW Washington Bureau

WASHINGTON, D.C. — The sweeping immigration reform bill passed by the Senate last week contained an amendment, vigorously pushed by U.S. electronics firms, to help retain foreign graduates of computer sciences and other high-tech university programs.

The amendment, cosponsored by Sen. Edward Kennedy (D-Mass.) and other representatives of high-technology states, would allow 4,500 exemptions every year for such specially trained students from a provision forcing foreign students to return home for two years after completing studies in this country before they could apply for work visas here.

The American Electronics Association, which has lobbied for the amendment for several months [CW, June 7], said it is pleased the Senate has recognized the manpower needs of the industry, but was unhappy with the quota set. It promised to work to have it eliminated or at least raised when the legislation is considered in the House of Representatives.

In arguing for the amendment, Kennedy said "it is contrary to our national interest to force students ... who are participating in essential academic, professional and industrial programs ... to leave the country." They would only end up in Germany or Japan working for competitors of U.S. firms, amendment supporters claimed.

Noting the concerted lobbying for the amendment by industries strapped for workers [CW, June 7] and by universities seeking students for their programs, Kennedy referred to the "deluge" of letters that senators have received on the subject. The amendment passed easily with bipartisan support, but the bill's sponsor, Sen. Alan Simpson (R-Wyo.), said he had "serious reservations" about some of its aspects and would look at it more closely when the bill goes to conference with the House, which has not yet passed the legislation.

Senate Unit Looking Into DP Matching

WASHINGTON, D.C. — A Senate government affairs subcommittee is looking into the rapidly increasing federal use of computer matching programs, which compare various agency computer files to try to identify people improperly receiving government benefits.

The Subcommittee on Oversight of Government Management, chaired by Sen. William Cohen (R-Maine), plans to hold a hearing on the use of computer matching late next month. A member of the subcommittee staff said the panel will hear testimony from federal officials pushing greater use of matching and from the American Civil Liberties Union and privacy advocates, who argue that matching violates the 1974 Privacy Act [CW, Dec. 14, 1981].

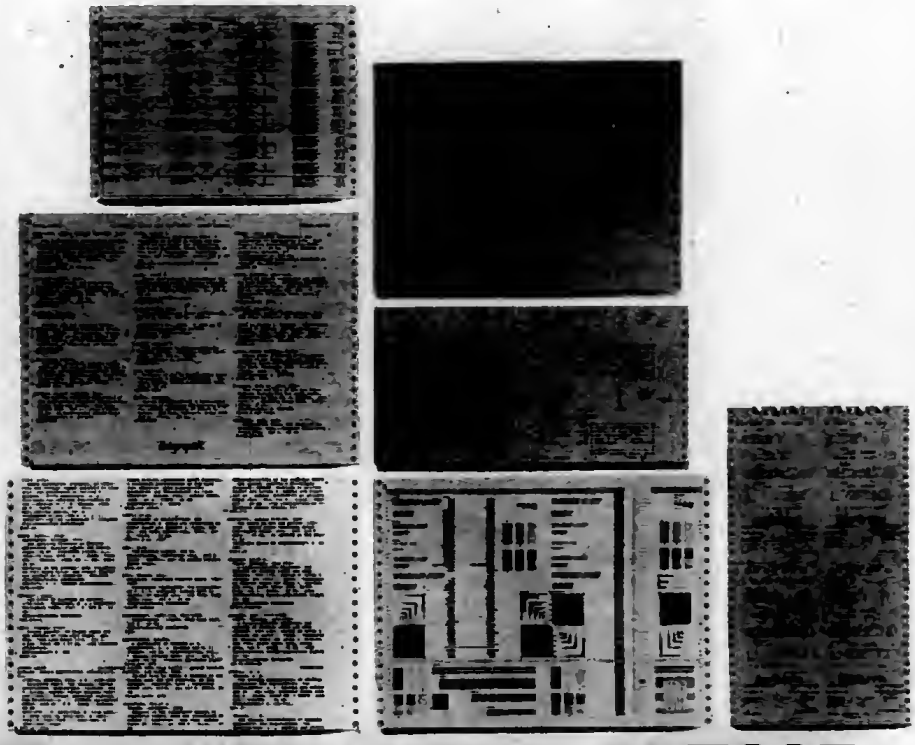
The government, for its part, has steadfastly claimed that the matching programs conform to all privacy laws and regulations and are essential to insuring the integrity of government benefits programs, currently plagued by billions of dollars of erroneous payments and overpayments.

House Resolution Making Progress

WASHINGTON, D.C. — The House of Representatives' Science and Technology Committee has completed action on a resolution that, if adopted, would call for the establishment of a National Science Center for Communications and Electronics.

The resolution is riding the crest of a wave of bills intro-

(Continued on Page 14)



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Washington Update

(Continued from Page 13)
duced during this legislative session to remedy declining U.S. science education and boost manpower reserves for fast-growing, high-technology industries.

According to the resolution, the national center devoted to communications and electronics "would promote the interest of the public at large in science and technology and tie the academic, corporate and government worlds together in an effort to increase interests and educational opportunities in those fields."

Congress Gets Bill To Protect Software

WASHINGTON, D.C. — A bill to improve software protection by specifying that obtaining a copyright does not limit trade secret law protection for computer programs has been introduced in Congress.

The bill, H.R. 6983, was introduced into the House of Representatives Aug. 12 by Rep. Robert Kastenmeier (D-Wis.). It would amend federal copyright law to provide that notice of copyright does not constitute publication or public disclosure, specifying that nothing in the relevant section of the federal law "shall alter or limit any right or remedy which the owner of a copyright may have under state trade secret law."

The change is one that has been sought by the software industry and its representatives here, who are concerned that applying for copyright protection can be considered a form of public disclosure, which nullifies any protection programs might have under trade secrets laws [CW, Aug. 16].

The Kastenmeier bill also proposes to incorporate the World Intellectual Property Organization definition of software into U.S. copyright law and would direct the Copyright Office to set regulations for the "secure deposit of material, including computer software, which is maintained or distributed on a confidential or restricted basis."

Kastenmeier promised to give the bill "high priority," and said the Judiciary Committee should begin considering the legislation after the Labor Day congressional recess.

Adapso, Rebuffed by Fed, Appeals Citicorp Ruling

WASHINGTON, D.C. — The Association of Data Processing Service Organizations, Inc. (Adapso) has asked a federal Appeals Court here to overturn a recent Federal Reserve decision allowing Citicorp to offer sophisticated DP services.

The association was rebuffed by the Federal Reserve when it asked the agency to reconsider some elements of its July 9 ruling permitting the bank holding company to establish a Citishare subsidiary for such services as home banking and electronic funds transfer [CW, Aug. 9]. Adapso fears Citishare, backed with the finances and power of the Citicorp organization, might unfairly compete with established DP services firms.

Adapso had asked the Federal Reserve for a hearing for reconsideration and clarification of the ruling, but the agency promised only to have its staff respond to association questions about the decision, an arrangement Adapso found unsatisfactory, its spokesman, David Sturtevant, said last week.

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CW Photo by S. Blakeney

Jerry Ruth

Report Distribution System Handles Bank's Work Load While Its Customers Sleep

By Susan Blakeney
CW Staff

BOSTON — Like the shoemaker's elves who worked through the night, the Bank of New England's newly installed Report Distribution System (RDS) software automatically collates, labels and routes the massive bank's numerous reports to their proper places while this city sleeps.

The bank's operations span Massachusetts communities from Boston to Fall River, Barnstable, Burlington and Springfield, and the reports these branches need every morning were very often late, incomplete or lost, according to Jerry Ruth, operation officer at the Boston headquarters.

"We had people working round the clock to get the reports out — everything had to be done by hand," Ruth recalled. The big paper shuffle has been replaced by the Birmingham, Ala.-based Mantissa Corp.'s RDS.

The first job converted to RDS involved mortgages. "It used to take us 2½ hours to compile these reports. Now it takes five minutes," Ruth reported.

Ruth started looking for an automated solution to his distribution problem in January and purchased the Mantissa product in March. He consulted several other Mantissa users; one of them, another major New England bank, Baybank, recommended RDS. "There was nothing else to compare it to. There's nothing else on the market that does what this does," Ruth said of his evaluation.

RDS was originally intended as a mail-distribution vehicle, according to Ruth, but developed into a full-fledged distribution system. With user-supplied control statements, the program spools out stacks of customized reports that include a top sheet or "banner" with routing instructions and a bottom sheet or "manifest" with a statement of contents and directory. The data center receives master lists of all reports and their contents.

When a remote site calls and asks where a particular report is, Ruth said, his department can locate the information instantaneously from RDS' master list. Previously, that job could take hours.

RDS runs on IBM mainframes, and Ruth uses it on his 3033 and 4341 systems in an MVS environment. Although the Springfield bank is a DOS shop, Ruth's shop has encountered no problems exchanging data with it because RDS is also DOS-compatible.

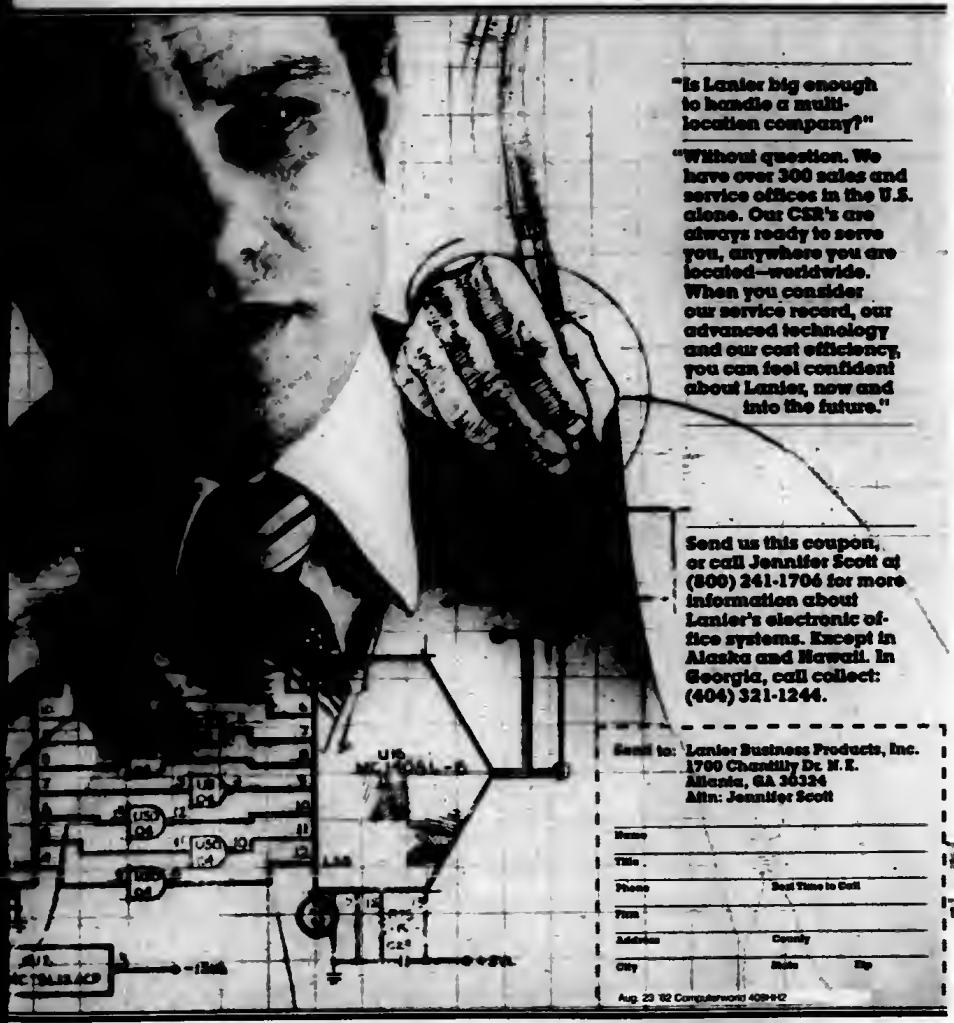
While the new distribution system has not yet replaced anyone at Bank of New England, it has substantially reduced distribution time, and Ruth predicted that it may eventually be able to cut staff with some of his future plans for RDS. "We've cost-justified it by meeting our users' needs more reliably," he said.

Ruth has "big plans" for the system. "We handle the payroll for approximately 814 companies. We haven't even started that conversion yet," he said, anticipating great savings on staff and time with that application.

"We can also spool information directly onto microfiche with RDS," he noted, and that is another area where the bank will greatly reduce distribution time. He also projected that the system may eventually direct data directly to the remote bank's printers over telephone lines.

"The system works very, very well . . . we've had a minimal number of problems with it, and most of those were user-oriented. In other words, they were my mistakes."

"A bigger commitment."
Joe Sensat, National Service Manager, Electronic Office Systems Division



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DPer's Management Scheme Aims at Flexibility

By Jeffry Beeler
CW West Coast Bureau

ANAHEIM, Calif. — A computing specialist with a Southern California retail store chain has proposed an information systems management scheme aimed at providing DP environments with the flexibility they need to accommodate unforeseen changes in both business and technology.

The plan identifies the places where a corporation's business and technological change is most likely to occur and reportedly allows each of those sites of change to be managed independently. The result is that any major facet of a company's business operations or information systems resources can be changed as necessary without affecting any of the other facets.

First described publicly during a recent meeting of the Data Administration Management Association, the scheme is the brainchild of Terry Goodbody, information management chief of Carter Hawley Hale Stores, Inc. here. Goodbody's idea, which has yet to be implemented, has been proposed as a possible alternative to the way companies have typically coped with business and technological change in the past.

Separate Management

For years, most large U. S. companies have been operating with little or no regard for the importance of managing their business configuration separately from their computing configuration, according to IBM business systems planning consultant John Zachmann. Nor have applications been managed independently of technology. As a result, corporate business procedures have become so intimately intertwined with information systems that neither can be readily changed without necessitating major revisions in the other.

The resulting inflexibility has greatly hindered the ability of U. S. businesses to adapt to technological and other changes and has raised some questions about the firms' long-term viability. Unless their efforts to manage change significantly improve, U.S. companies run the risk of "becoming inflexible and turning into dinosaurs," Zachmann said.

Concern about the corporate world's lack of adaptability recently prompted Goodbody to devise his own information systems management scheme, which is intended to increase the ability of computing technology and business to respond rapidly to each other's changing needs. Known as "information systems engineering," the scheme breaks computing management down into four main topics of interest — configurations, environment, data and information.

Configuration Management

In configuration management, a company aims to create a model of its business configuration and then do likewise with its information systems configuration. By relating the two separate models to each other, an organization can see exactly how each of the configurations is affected by changes in the other.

The point of such an exercise is that because a company's business and systems configurations change independently of each other the two entities need to be managed separately. In the absence of independent management, the two configurations eventually become so thoroughly interrelated that neither can be changed extensively without requiring a major overhaul of the other.

In data management, the main aim is to produce an integrated financial data base that serves as a kind of master blueprint for a company's overall information system. Such a data base is indispensible if a firm wants to make sure each module of its information system — accounts payable, accounts receivable, general ledger and so on — dovetails with all the others to form a unified whole, Goodbody said.

In the past, he added, companies have developed their information systems with little or no consideration about how the individual pieces will ultimately fit together.

Another benefit of an integrated financial data base is that it allows a business to manage its data independently of the corporation's functions. The result: A company can change its data as necessary with only a minimal impact on its functions and vice versa, Zachmann explained.

In environment management, Goodbody is concerned with developing standard interfaces that allow a firm to preserve its existing applications in the face of unforeseen changes in hardware, software, data base or communications technology.

The management scheme's fourth component, Information management, focuses on a company's changing user requirements and seeks to manage them independently of the corporation's data and technology.

To implement the information systems engineering concept, a business' computing department would have to establish an additional DP group that would probably be situated between the firm's application development and technical support organizations, Goodbody said.

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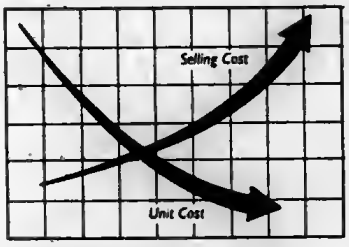

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Futures Broker Using Models To Make Buy, Sell Decisions

NEW YORK — Some Wall Streeters consult charts to see which way the financial winds are blowing. Others study industry statistics or government reports.

But Grant Smith, a commodity futures market consultant at Drexel Burnham Lambert's Futures Advisory Corp. (DBL-FAC), uses computer models to help decide whether contracts in commodity futures such as gold, coffee and sugar should be bought or sold.

In fact, the opinions of people at DBL-FAC matter very little when it comes to trading decisions on the futures market. Instead, every trading decision is carefully worked out in advance and tested via computer simulation.

Buy, Sell Results

Using a data base that contains information such as price, volume and size of outstanding contracts for about 80 commodities, the computer is used to simulate probable results of buying and selling actions. By adjusting the parameters of the various models used, the computer enables DBL-FAC's commodities group to ask a number of "what if" questions.

Smith admits these computer-generated simulations of market activity have their limitations. For one thing, they do not indicate how prices would have changed if the company's clients had actually been buying or selling a particular commodity during the period in question.

However, the use of computer simulation techniques have, over the past five years, yielded returns averaging from 25% to 60% per year for clients whose commodities portfolios are managed by what is now known as the DBL-FAC Group. This group manages the funds of about 200 investors.

Smith noted that some accounts managed by the group have been closed out, resulting in losses to the investors; on the whole, however, those sticking out the rough and tumble of the market have been rewarded.

Recent Access

Although the investment record of the group clearly demonstrated the importance of computers to DBL-FAC's research needs, it is only recently that Smith has had unlimited access to computing resources.

Greater access to computer power was accomplished by renting an IBM 4331 for about $7,500 per month after the firm had been paying about $15,000 to an outside service bureau. The service bureau bill would have been even higher, but Smith kept the work to a minimum.

"It was easy to run up charges of $50,000 a month. If the time charge had not been a constraining factor, I would easily have spent 10 times the $15,000 I was spending — and possibly quite a bit more," he reported.

Full-time access to the 4331 has enhanced the group's research efforts. "We are able to build and simulate new models almost as quickly as we can dream them up. We can also look at interesting relationships quickly and easily on an ad-hoc basis, such as, 'How would gold prices appear to a person in Switzerland?' "

Besides simulation, DBL-FAC got a little extra with the system. The computer is also used to record all transactions in the accounts the group manages, as well as registering daily changes in the value of each account. This activity almost duplicates a brokerage firm's back-office operation, Smith pointed out.

Still, market simulation is the backbone of work done on the system. With the system at its disposal, the research group has developed a large number of indicators that guide buying and selling decisions, according to Smith.

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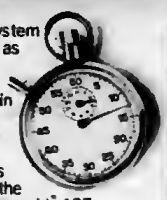

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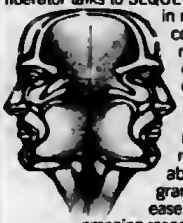

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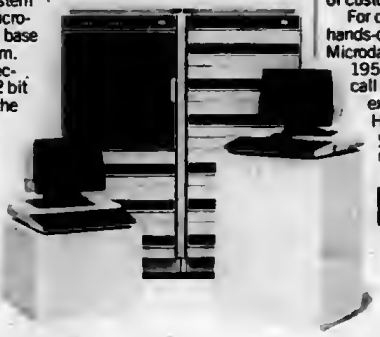

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Insurance Firm Sending Its Data Over High-Speed Satellite Link

HARTFORD, Conn. — The Travelers Insurance Co. is transmitting computer information by satellite between its corporate headquarters here and its Atlanta suburb regional facility at 1.544M bit/sec. The data communications system operates 24 hours a day, seven days a week, while maintaining an accuracy of one error per trillion bits, according to the assistant director of data processing, Glendell K. Davis.

Travelers is one of the largest insurance and diversified financial service providers in the country. It employs 28,000 people nationwide; its assets, as of June 30, totaled $26.2 billion.

The purpose of the application is to provide data center backup and computer resource sharing between the two locations, Davis said. For example, bulk data processed at one complex can be transferred via the satellite link to the other site for printing, micrographics processing or as input to another production application.

The system consists of two BRI1720 Satellite Data Systems, supplied by Allied Corp.'s Bunker Ramo Electronic Systems Division, used in conjunction with a Satellite Business Systems communications service. The BRI1720s, which are capable of transmission speeds up to 6.3M bit/sec, are employed at Travelers to transfer data between two IBM 3033 mainframes and could also be used between two tape drives or a computer and a tape drive.

The speed of the satellite link facilitated the migration of production work loads to the new processing center near Atlanta, Davis said. For example, entire data bases can be moved from one location to another in minutes, a function formerly available only with system components locally attached and in physical proximity. This is important to the insurance company, where an average of 200 data sets are currently transmitted and more are expected.

In citing the time-saving benefit of the new system, Davis explained that it now takes 12 minutes to transmit by satellite the equivalent of a 2,400-ft tape reel at 1.5M bit/sec. Normally it would take 31 hours and 15 minutes to accomplish the same transmission over land lines at 9,600 bit/sec.

Davis pointed out that the low error rate is a valuable attribute. The manufacturer guarantees that three million tape reels will be transmitted before an error occurs.

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QED Publishes Data Base Paper

WELLESLEY, Mass. — Q.E.D. Information Sciences, Inc. has published "Evaluating the Costs/Benefits of Data Bases," a monograph by William E. Perry.

The monograph provides a concise, six-step methodology for determining if a data base is appropriate for a given situation. In it, planners will learn how to define requirements and then determine the costs and benefits of those requirements before committing to a data base.

The monograph costs $15 ($12 prepaid) from Q.E.D., P.O. Box 181, 180 Linden St., Wellesley, Mass. 02181.

Data Center Goes to Package To Handle JCL Listings, Manpower and Paper Costs

The Goodrich data center runs an 8M-byte IBM 370/168 and a 12M-byte IBM 3033; together they produce about 6.5 million pages of data per month, either on paper or microfilm.

AKRON, Ohio — The combination of computer output microfilm (COM) and a utility software package is helping B.F. Goodrich's data center here develop a flexible method of handling job control language (JCL) listings as well as save manpower and paper costs.

Emmett C. Gallagher, senior management information systems (MIS) specialist, explained that the Goodrich Akron Data Center handles about 8,000 production jobs per month with two mainframe CPUs: an IBM 370/168 with 8M bytes of core memory and an IBM 3033 with 12M bytes of core. Output from those jobs requires a monthly printing of abut 6.5 million pages, either on paper or microfilm.

"Before we installed the Share, Inc. software, we used to print all of the JCL listings on paper," recalled David C. Christy, section manager of information processing at the MIS operations center. "We had no way to flag jobs that didn't end normally (Abends), so our five schedulers had to scan all of the JCL every day to make sure every job ran right. This wasted a lot of time, considering that only 4% to 5% of our jobs are Abends."

Scanning Time Saved

The new software saved on scanning time, Christy explained. It provides a JCL list program that identifies the Abends and prints a notification on paper, identifying them with the legend "pan spool." This immediately alerts the operators to the fact that erroneous output exists and eliminates scanning the JCL. Now, operators only have to look at JCL for Abends.

The programming saved the JCL for display on IBM TSO terminals if anybody needed it. The listings were kept for 72 hours and then dumped to tape. If anyone needed to check the JCL after 72 hours, it could be retrieved from tape, he noted.

"The Share, Inc. programming was a step forward for us, but it still was somewhat limited," Christy said. "It only provides for on-line display of JCL on our terminals — there was only manual print capability in case we wanted to save it."

Another problem with the programming was that Goodrich has 650 remote terminals on-line to the mainframes. TSO services would be significantly degraded with the viewing of all JCL output.

As a result, Gallagher added COM print capability for the JCL. The lists are retained in a Pansophic, Inc. Panvalet file — available to operators through TSO terminals — until 6 a.m. the following day. Then the JCL is printed on microfiche with the center's on-line Kodak Corp. Komstar 200 micro-image processor. As soon as the lists are on microfilm, the Panvalet file is purged and all further reference to the JCL is through microfiche readers.

Duplication of the microfiche lets end users keep the JCL as long as needed. Even after six months or longer, the lists can be at the user's fingertips.

Two hours after COM printing starts, the microfiche are duplicated and available to users. Also, as part of the printing software, the JCL is accumulated on magnetic tape. The month-end tapes are kept for one year, while the original microfiche are kept for only 30 days and then destroyed.

"It would be wasteful and expensive to save these listings on paper," Christy said. "We're also trying to convert as many of our reports as possible to microfilm because of the tremendous cost savings involved. We have gone to 360 page images per microfiche, and our production costs per fiche now is about the same as

(Continued on Page 22)

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MIPS ratings published August 2 in *Computerworld's* "Annual Hardware Round-Up" were not those submitted by Control Data, but rather *CW's* own estimates.

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SYSTEM	CDC MIPS	CW MIPS
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CYBER 170/730	2.3	1.1
CYBER 170/740	4.2	2.7
CYBER 170/750	7.5	5.7
CYBER 170/760	10.0	7.8
CYBER 170/825	1.5	.79
CYBER 170/835	3.5	1.2
CYBER 170/855	8.0	1.5
CYBER 170/865	11.0	2.3
CYBER 170/865 Dual	19.3	—
CYBER 170/875	19.0	2.4
CYBER 170/875 Dual	32.0	—
CYBER 176	15.0	17.7

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Small Systems Topic of Meet

ARLINGTON, Va. — Effective use of small computers in a variety of functions will be the theme of the national conference on "Using Small Computers: Implementing Integrated Information Systems," to be held here Oct. 18-20. This event is being sponsored by *Infosystems* magazine.

Emphasis will be placed on how minicomputers and microcomputers can be used in areas such as office automation, decision support systems, word processing, training and graphics. The conference will also include an exhibit of mini and micro hardware and software.

Registration costs $695, and further details on the conference are available from U.S. Professional Development Institute, 12611 Davan Drive, Silver Springs, Md. 20904.

AIM Conference Set Oct. 10-13

CHICAGO — "Information Management: Change Agent of the Future" is the theme of the 1982 Annual Conference and Vendor Exhibition sponsored by the Association of Information Managers (AIM) for savings institutions. The conference, structured for senior management and data center managers of thrift institutions, will be held at Marriott's Ranch Las Palmas Resort in Rancho Mirage, Calif., from Oct. 10-13.

As part of the conference, hardware and software vendors, consultants and service bureaus will exhibit their products and services for the thrift industry.

The fee for the conference is $200 for members of the association and $300 for nonmembers. More information may be obtained from Michael J. Hoogendyk, executive director, AIM, Suite 2221, 111 E. Wacker Drive, Chicago, Ill. 60601.

Business Guide Compares Micros

VIRGINIA BEACH, Va. — *The Businessman's Guide to the New Microcomputers and Software* has recently been released by publishers at Software Ideas.

The text reportedly features comparisons of Hewlett-Packard Co.'s HP 125, IBM's Personal Computer, Xerox Corp.'s 820 and 820-II, Apple Computer, Inc.'s Apple III and Digital Equipment Corp.'s Rainbow 100 and Decmate II microcomputers.

It includes illustrated performance charts, a section on tax consequences of buying a micro, a directory of software available for these and other Digital Research, Inc. CP/M-based computers and a glossary of commonly used computer terms.

The guide sells for $9.95 and can be purchased from Roger Gray & Associates, which is located at 117 S. Lynnhaven Road, Virginia Beach, Va. 23452.

Data Center Goes to Package

(Continued from Page 19)

printing 30 pages of data on paper through our IBM 3800 laser printers. If we fill a microfiche, we can print 360 pages of data at about ½ the cost of paper output. That's an 87½% saving on an item as important as making printout."

The center installed the Komstar micro-image processor about two years ago as an upgrade for a veteran wet-process COM. The Komstar unit, which uses laser imaging technology, writes on microfilm and eliminates the need for liquid chemicals.

Throughput also is speeded because the laser COM is on-line to the computer (the operators treat it just as another printer). Gallagher estimates that the production window for the JCL microfiche would have to be increased by one to two hours if the older, off-line wet-process COM was still in use.

"When the Komstar unit was installed, we were running about 100 tapes a day on the off-line machine," Christy recalls. "We were getting into three- and four-day retention for the tapes. Most of the delay was caused by the time and manpower needed to mount and dismount the tapes."

The proposal for the new laser COM estimated a 2½-year pay back. This resulted from reduced maintenance, lower film cost, elimination of processing chemical and elimination of overtime. At the end of the year, a post-installation study was made to determine the actual savings. Because of the increased volume the new unit could absorb, the first-year savings actually was over half of the machine's cost.

Estimated Savings

Savings on the production JCL Sysout application are estimated to be about $3,000 per month in out-of-pocket costs for unused paper. But the production JCL is only the beginning, according to Christy. After all of the production JCL are on the system, test JCL will be added to it. This will add about another 500,000 pages per month to the laser COM.

Currently, programmers sometimes have to wait until the day after their program tests to get paper printouts. The new programming will allow them to see their JCL immediately, with microfiche available the following morning.

The quick turnaround is expected to increase programmers' productivity. Because the listings are available on terminal, they may be able to run second or even third tests on their programs during the same day.

The new programming fits neatly into the cost-saving efforts of the data center, according to Charles H. Goodson Jr., manager of information processing at the MIS operations data center. From 1980 to 1981, the center absorbed a 35% increase in work load with a staff that decreased from 90 people to 79.

"Things like the Share, Inc. programming help us contain costs," Goodson said. "That's why we're preparing to give the enhancement back to Share, Inc. We hope it will help other data centers save on their costs, too."

Rental Firm's Mainframe Tracks What's Where

PALO ALTO, Calif. — In the rental business, keeping track of which customer has what equipment and where and when it is supposed to be used next can present a real problem. Especially when your customers are large multinational companies as well as small firms that are scattered across the country and your inventory consists of hundreds of different electronic devices ranging from power supplies to microprocessor development systems.

Genstar Rental Electronics, Inc. (Grei) keeps track of the comings and goings of its inventory with a large-scale computer system. The system, a Honeywell, Inc. DPS 8/20, was installed about a year ago for the control of inventory and accounting functions, for telemarketing applications and to perform market analysis on future customer needs.

"In the rental business, you have to anticipate what equipment the customer will want and have it on the shelf when he needs it," Bernard L. Fleming, Grei's data processing manager, noted. "The computer assists us in analyzing our customers' rental histories by each item, plus other analyses that give us a feel for what kinds of equipment and services our customers will want so we can better predict their needs and make better buying decisions ourselves."

Telemarketing Program

Grei, which was founded about 20 years ago, initiated its telemarketing program in 1979 using a Honeywell Level 62 minicomputer that had been installed two years earlier. However, as its rental revenues soared from about $400,000 to more than $2 million per month — more than quadrupling in a period of five years — the firm soon realized that it needed a larger computer system.

Moreover, while the Level 62 did support on-line inquiry/support transactions, files were updated by batch processing. To keep up, the firm needed an interactive computer system, Fleming observed.

With the DPS 8, people at Grei headquarters and at the firm's regional offices can track equipment movement, customer contracts and other variable data via their CRT terminals. The new mainframe supports six times the number of CRT terminals as the Level 62 and is presently geared to supply up-to-date information at least 14 hours per day. The 8/20 system includes 2M bytes of main memory, two 9-track tape drives, a 200 line/min printer and a front-end network processor that controls 32 communications links connecting on-site and remote CRT terminals to the central computer.

Aside from speeding up access to its customer files, the computer has also saved the firm a considerable amount of money, Fleming noted. "For example, voice communications costs have been reduced. One quick query of the DPS 8 now confirms equipment location and availability in a matter of seconds — without using the telephone."

The more powerful computer system has also allowed Grei to maintain the same staff level — cutting personnel costs — even though the processing workload has dramatically increased.

According to Fleming, the system has also enhanced the firm's customer services. With the Level 62, the company produced identical reports for all customers, but now it can tailor them for specific kinds of information. The DPS 8 also breaks that list down by equipment used at various customer locations, the shipped-to address and the billed-to address.

"Customers tell us that this kind of reporting helps them keep better track of their business activity with Grei. Since we really hadn't thought about the computer's impact on customer relations, we're especially pleased with the positive feedback," he added.

Genstar DP Manager Bernard Fleming and Allyson Krieger, an operations supervisor, change backup tape reels on the DPS 8/20.

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Call For Papers

APPLIED COMPUTER RESEARCH, INC.'S FOURTH ANNUAL CONFERENCE ON DP PERFORMANCE MANAGEMENT '83.

Phoenix, February or March.

Applied Computer Research is seeking participants for 30-minute presentations at the conference. Subjects include strategic business planning, capacity management, forecasting the impact of new systems, user service reports, communicating with management, pricing/cost/benefit analysis, productivity in development, software engineering, motivation and training, quality of computing, problem/change management, automating the data center and other suggested topics.

No formal papers need be prepared, although copies of handouts and/or visuals will be required.

The call-for-participation form can be obtained from Applied Computer Research, P.O. Box 9280, Phoenix, Ariz. 85068.

Calendar

Sept. 13-14, San Francisco — **CAD/CAM Systems: Planning, Equipment Selection and Applications.** Contact: Seminar Department, Datapro Research Corp., 180 Underwood Blvd., Delran, N.J. 08075.

Sept. 13-14, Washington, D.C. — **IBM's Systems Network Architecture: A Master Plan for Teleprocessing.** Contact: Seminar Department, Datapro Research Corp., 180 Underwood Blvd., Delran, N.J. 0807S.

Sept. 13-15, New York — **Data Communications: An Introduction to Concepts and Systems.** Contact: Seminar Department, Datapro Research Corp., 180 Underwood Blvd., Delran, N.J. 08075.

Sept. 13-15, New York — **Systems Analysis and Design: Concepts and Effective Practice.** Contact: Seminar Department, Datapro Research Corp., 180 Underwood Blvd., Delran, N.J. 0807S.

Sept. 13-15, Washington, D.C. — **DP Project Management: A Practical Approach.** Contact: Seminar Department, Datapro Research Corp., 180 Underwood Blvd., Delran, N.J. 08075.

Sept. 13-15, Washington, D.C. — **Minicomputer Systems: Guidelines for Succesful Selection, Acquistion & Operation.** Contact: Seminar Department, Datapro Research Corp., 180 Underwood Blvd., Delran, N.J. 08075.

Sept. 13-1S, Boston — **Data Base Management Systems: Concepts and Guidelines.** Contact: Seminar Department, Datapro Research Corp., 180 Underwood Blvd., Delran, N.J. 08075.

Sept. 13-17, Boston — **MVS-SP Internal Logic, System Design and Performance.** Contact: Computer Systems Research, Inc., Avon Park S., 40 Darling Drive, P.O. Box 45, Avon, Conn. 06001.

Sept. 14, New York — **CICS Users Group Meeting: Recovery/Restart.** Contact: Teltech, 548 Fifth Ave., New York, N.Y. 10036.

September 15, New York — **CICS/VS Concepts and Facilities.** Contact: Teltech, 548 Fifth Ave., New York, N.Y. 10036.

Sept. 16-17, New York — **Data Communications: Advanced Concepts and Network Management.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Sept. 16-17, New York — **Appraising Performance of the Technical Staff.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Sept. 20-21, San Francisco — **Local-Area Network: Selection Guidelines.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 0807S.

Sept. 20-21, Los Angeles — **Structured Maintenance: Reducing Costs with a New Methodology.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 0807S.

Sept. 20-22, New York — **Information Systems Planning: A Structured Approach.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Sept. 20-22, New York — **Advanced DP Management: Methods and Techniques in the '80s.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Sept. 20-24, New York — **CICS/VS Command-Level Programming.** Contact: Teltech, 548 Fifth Ave., New York, N.Y. 10036.

Sept. 20-24, Philadelphia — **Systems Analysis Workshop.** Contact: Q.E.D. Information Sciences, Inc., Q.E.D. Plaza, P.O. Box 181, Wellesley, Mass. 02181.

Sept. 20-24, Arlington, Texas — **CICS Command-Level Programming.** Contact: Q.E.D. Information Sciences, Inc., Q.E.D. Plaza, P.O. Box 181, Wellesley, Mass. 02181.

Sept. 21-23, Teaneck, N.J. — **Conflict Resolution in the DP Environment.** Contact: Q.E.D. Information Sciences, Inc., Q.E.D. Plaza, P.O. Box 181, Wellesely, Mass. 02181.

Sept. 21-23, Boston — **Design of On-Line Systems.** Contact: Q.E.D. Information Sciences, Inc., Q.E.D. Plaza, P.O. Box 181, Wellesley, Mass. 02181.

Sept. 22-23, Toronto — **SAS Basics.** Contact: SAS Institute, Inc., P.O. Box 8000, Cary, N.C. 27511.

Sept. 23-24, Chicago — **IBM's Systems Network Architecture: A Master Plan for Teleprocessing.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Sept. 27-28, Chicago — **SAS Basics.** Contact: SAS Institute, Inc., P.O. Box 8000, Cary, N.C. 27511.

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Bank Expects DP Capacity To Triple With Mainframe

SAN DIEGO — The installation of a mainframe at Great American Federal Savings and Loan Association will reportedly more than triple its data processing capacity and support an expanding network of check processing, teller communications and automated teller machines (ATM).

Great American, previously known as San Diego Federal, is the sixth largest savings and loan in California with branches concentrated here, Orange and Riverside counties and the Central Valley. The association started the year as the 20th largest savings and loan in the nation and one of the two largest in San Diego County, a spokesman said.

By mid-year, its merger activities will make it the 11th largest savings and loan with assets of more than $4 billion and 145 offices throughout California, a bank spokesman said.

Great American was among the first to adopt intelligent terminals in branches, install ATM and implement a fully automated telephone bill-paying service, he maintained.

First ATM in West

It reportedly introduced the first ATM in the western U.S. in 1975 and now has more than 110,000 accounts that can activate the 24-hour teller network. Its 70 ATMs make up the largest such network of any savings and loan in the nation, a spokesman said.

A quarter of a million transactions are handled monthly — about 8,000 per day — through the ATMs and will soon be supported by an IBM 3081, according to a spokesman. In 1981, total ATM transactions were 2.46 million accounting for $240 million, and use of the machines has doubled over the past 16 months, he said.

"The addition of new services, the growth of our association and the expansion of our market areas through mergers has pushed out computer operations to the limit," bank President and Managing Officer James Schmidt reported. Therefore, the institution decided that investing in a 3081 mainframe would be in the interest of the association and its customers.

"The purchase of this computer and the construction of the operation center are statements of optimism for the future," Schmidt said. "We will continue to be aggressive and innovative in offering our customers a full line of financial services."

A $20 million operations center is being constructed, with completion expected in early 1983, to house all of the associations' DP equipment, including the new 3081. It will be the computer link to all of the firm's consumer electronic banking activities, a spokesman said.

As a side benefit, an estimated $6,000 per month savings in electrical costs are expected, according to Senior Vice-President and DP director Thomas Lester. The mainframe is said to generate less heat in operation — cutting air-conditioning costs.

Book Contains Papers Presented at IFEBP '81

BROOKFIELD, Wis. — A book containing papers presented at the international Foundation of Employee Benefit Plans' (IFEBP) 1981 EDP Institute has been published by the IFEBP.

Titled "1981 EDP Institute Proceedings," the 111-page paperbound book covers the program held last December in Hollywood, Fla. Its table of contents lists such papers as "The Office of Tomorrow" and "Computer Concepts."

The cost of the book for foundation members is $6; nonmembers will be charged $10. IFEBP can be reached through P.O. Box 69, Brookfield, Wis. 53005.

Meet Set Oct. 4-6 For 'Model' Users

DALLAS — Lloyd Bush and Associates will hold its annual Model users group meeting here Oct. 4-6.

The meeting will cover improved decision support software applications, new features of the Model financial planning package, current Model interfaces and expanded uses for Model, the vendor noted. Speaker presentations will include subjects such as "Consolidations," "Cash Flow Analyses" and "Lease vs. Buy in Software Purchases."

The registration fee for the conference is $250.

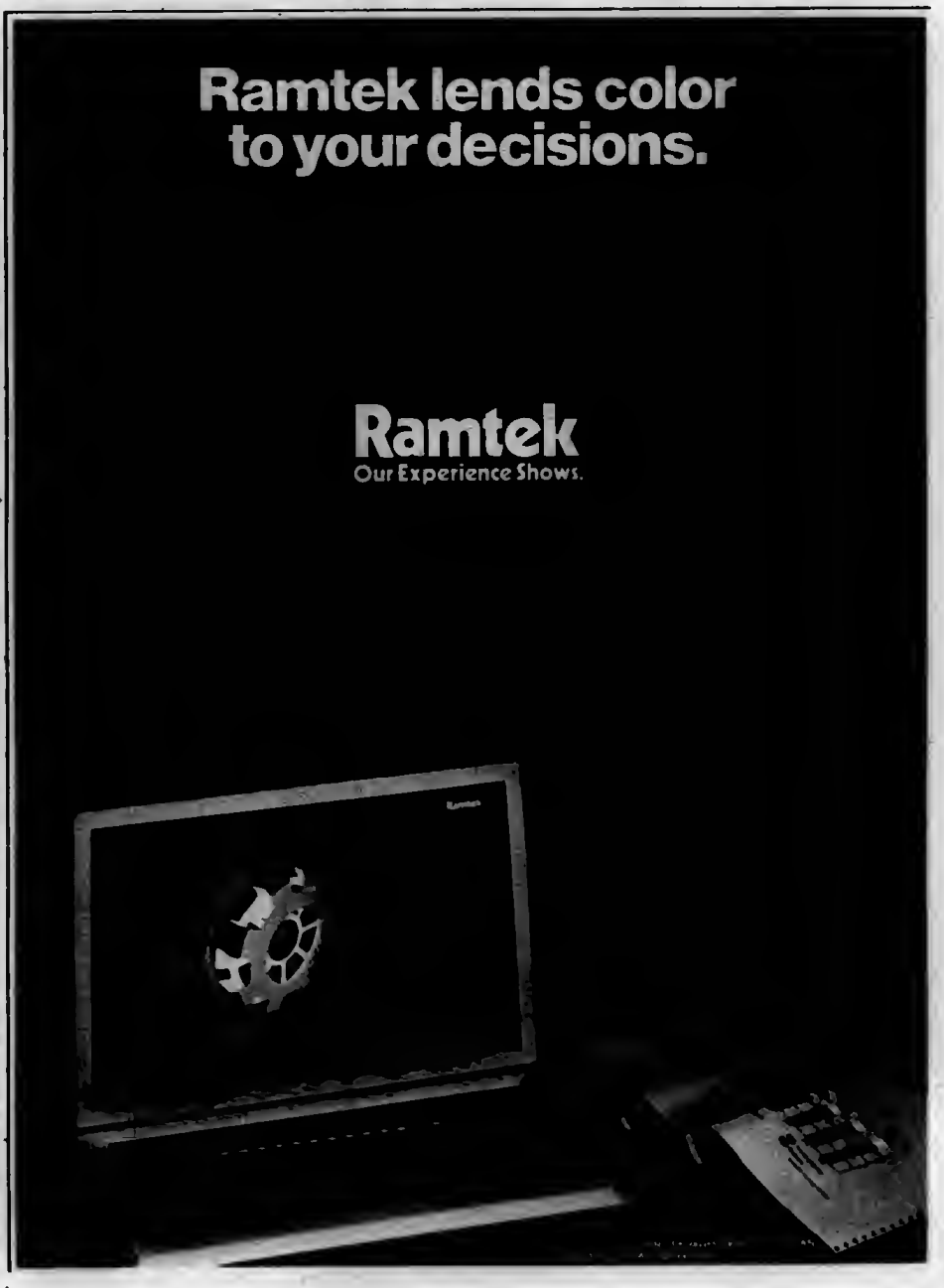
Further information is available from Lloyd Bush and Associates, which is located 156 William St., New York, N.Y. 10038.

Forum to Focus On Data Storage

SANTA CLARA, Calif. — An international forum on significant trends in data storage technology, markets and applications will be held here next month by Disk/Trend, Inc., publishers of *Disk/Trend Report*, and Freeman Associates, a management consulting firm.

Datastorage82 will take place on Sept. 20-22 and feature 45 key industry leaders as speakers and panelists. It will include discussions on emerging data storage requirements and new applications.

The fee for the three-day event is $700. Additional information is available from Cartlidge & Associates, Inc., Suite 205, 4030 Moorpark Ave., San Jose, Calif. 95117.



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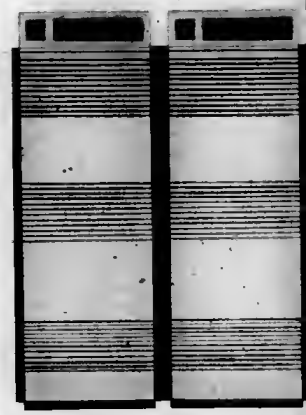

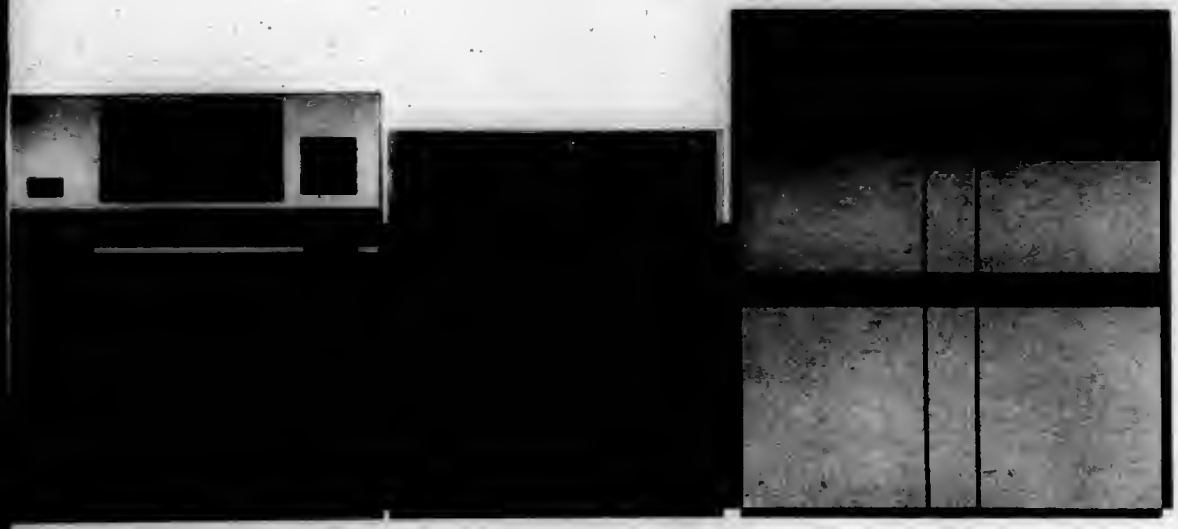

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APL Users Conference Set for Toronto Oct. 4-6

TORONTO — The 1982 APL Users Meeting sponsored by I.P. Sharp Associates Ltd. is scheduled to take place here Oct. 4-6.

The conference will include the presentation of papers describing a wide variety of APL applications and workshops detailing problems involved in the introduction of APL to an organization, managing an APL installation and recruiting and training staff.

There also are preconference tutorials designed to provide information on the use of APL by actuaries, financial planners, managers or statisticians and economists. In addition, a spokesman said, there are special-interest "birds-of-a-feather" sessions scheduled.

The registration fee is $250 (U.S.) and $295 (Canadian) and covers admission to all sessions and events during the three-day conference. The fee including the preconference tutorials is $300 (U.S.) and $355 (Canadian), according to the vendor spokesman.

Further information is available from Rosanne Wild or David Manson, who can be reached at 1982 APL Users Meeting, I.P. Sharp Associates, Suite 1900, 2 First Canadian Place, Toronto, Ont., Canada M5X1E3.

NRMA Slates Conference Set for October in Dallas

DALLAS — The 24th Retail Systems, Technology & Communications Conference will be held here Oct. 17-20 by the National Retail Merchants Association (NRMA).

Featured speakers will include Richard C. Marcus, chairman and chief executive officer of Neiman-Marcus, and Captain Grace M. Hopper of the U.S. Navy. The conference theme is "Computer Technology — Yesterday, Today and Tommorrow."

About 70 suppliers will exhibit, demonstrate and explain their products and services for improving retail productivity. Areas of discussion include computer equipment, marking machines and scanners, point-of-sale terminals and electronic cash registers, software and programmed services, service bureaus, personal computers and other specialized devices and systems.

The registration fee for NRMA members is $325; for nonmembers, $575. The one-day charge for members is $165; nonmembers will be charged $290.

More information is available from the NRMA's Information Systems Division at 100 W. 31st St., New York, N.Y. 10001.

HS/MIS Meet Scheduled For New York

NEW YORK — The Second Annual Conference on Management Information Systems in the Human Services (HS/MIS) will be held at the Roosevelt Hotel here Oct. 25-26.

Sponsored by the Center for Management at Baruch College of the City University of New York, the conference will focus on improving accountability and efficiency in service delivery while continuing to protect individual rights of privacy.

The keynote speaker of the "Privacy, Confidentiality and Access of Information" conference will be Elmer Oettinger, chairman of the Privacy Committee of the American Bar Association. A special luncheon address on the future of individual rights in a technical world will be delivered by futurist Ralph Hamil, the World Future Society's co-representative at the United Nations.

Registration fees are $235 for individuals, $205 each for three or more from one organization, $115 for students or faculty of schools of social work or public administration and $25 for the special luncheon. The Center for Management is located at Baruch College, Box 520, 17 Lexington Ave., New York, N.Y. 10010.

CRWTH Offers SAS Courses

LOS ANGELES — An interactive self-study course designed to provide end users with a thorough knowledge of basic and advanced functions of SAS Institute, Inc.'s software has been released by CRWTH Computer Coursewares.

"Using SAS" teaches the student the functions of SAS by simulating the actual SAS commands on the terminal. Upon completion of the course, the student will be able to generate SAS reports, manipulate arrays and perform statistical analysis.

The course contains 1,400 screens and is divided into 19 sessions. It runs under IBM Instructional Systems. Course material is presented on a terminal using an interactive student/computer dialogue.

The course can be leased for $3,750/year or a perpetual license can be purchased for $7,500, CRWTH said from Suite 205, 12655 Washington Blvd., Los Angeles, Calif. 90066.

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New Zealand User

Airline Cures OS/JCL Ills With Utility Package

WELLINGTON, New Zealand — When Air New Zealand ran into problems with its IBM OS operating system, technicians looked to a utility software package for help.

According to the airline's data processing group, the roadblock actually came from the JCL interface to OS rather than from the operating system itself.

Richard Shorter, manager of systems and programming, said, "We expressed a dissatisfaction with OS/JCL in terms of training all our DOS people. The design of OS/JCL is 20 to 25 years old and is very syntax-dependent. This makes it hard for people to become very skilled in JCL if they are not using it all the time.

"Another thing we were interested in was automating the operator area — to get away from the idea of operator interaction with jobs as they are starting or running," Shorter explained.

Job Organization Language

Shorter said that they wanted something that offered automatic job scheduling and networking, without going to JES3 on MVS.

The product providing the solution at Air New Zealand is Job Organization Language (JOL), developed by Clark Computing Software of Melbourne, Australia, and marketed in North America and Europe by Software Module Marketing of Sacramento, Calif.

After using the English-like JOL, nearly everyone in the installation can use the full power of OS, according to Shorter. OS has become "an obedient and powerful tool," Shorter said.

Martin Dagg, Air New Zealand's superintendent of training, concurred with Shorter.

"Before I was acquainted with JOL, I would have agreed that OS was the problem. Now that I have the knowledge of JOL and its effects, I realize that it is the interface that is the big problem," confirmed Dagg.

"Before JOL," Dagg continued, "we had people who were overwhelmed by JCL; now with JOL, they are more willing to have a go. We have many more people who are attempting to write programs and are writing good JOL programs. So their morale is improved.

"People can understand what is actually happening by looking at the code," Dagg said, "and nothing is passed by word of mouth because it is clear in JOL. They know what is being done and that things are being done to best suit the project in which they are involved."

When Air New Zealand bought JOL from Software Module Marketing, the company was upgrading its shop from DOS to OS. Its basic hardware installation consisted of several IBM 3033 mainframes and some Facom plug-compatibles from Fujitsu, Ltd.

When asked what JOL meant to the conversion, Wayne Cogle, project manager of the conversion team, said, "I have experienced DOS to OS conversion before. They are awful. We avoided all of the problems by using the DOS to JOL converter and, at the same time, gained a solid place to start our automated scheduling and networking system.

"Our programming staff, which is comprised primarily of PL/1 programmers, could easily understand the English-like JOL statements," Cogle went on to say.

"As a result, the programming staff was able to avoid learning JCL during the conversion. This was worth a great deal to us," he concluded.

Insci Slates Annual Meet For Oct. 25-27

MONTVALE, N.J. — Information Science, Inc. (Insci) has scheduled its 13th Annual International Conference on Human Resource Management Systems for Oct. 25-27 at the MGM Grand Hotel in Las Vegas.

The theme of the conference is "Economic Health: Teamwork Among Industry, Labor, Government and Technology." The conference reportedly will cover current economic and political issues as they relate to human resources planning.

More than 40 workshops and seminars are planned. Among the topics to be covered are "The Reagan Impact on Equal Employment Opportunity" and "AT&T's Post-Divestiture Approach to Human Resource Planning."

The registration fee for the three-day conference is $550 for each of the first three attendees, $500 for each additional attendee from the same company and $85 for spouses. The deadline for advance registration is Oct. 1.

Information Science will provide charter flights from major cities to reduce travel costs. Further information about the conference can be obtained from Insci at its headquarters at 95 Chestnut Ridge Road, Montvale, N.J. 07645.

Agency Bolsters On-Line Access With DBMS

By Susan Blakeney
CW Staff

SALEM, Ore. — With nearly 300,000 claims on file and the need to process more than 7,000 on-line transactions daily, a data base management system (DBMS) became a necessity for the Oregon State Workers' Compensation Department (WCD) here.

The WCD was created in 1977 to act as a watchdog on the insurance companies that offer accident insurance to state workers. Department functions run the gamut from maintaining and monitoring records to administering hearings in contested compensation matters to developing accident-prevention programs.

Prior to instituting the current data base system, all claims processing was handled manually with batch updates, WCD Systems Coordinator Joanna Hittle explained.

This system soon became inadequate, so the WCD hired a consulting firm that recommended installing a management information system based on minicomputers. "But since we are tied into the statewide [IBM] 3033s, operating much like a time-sharing customer, we rejected the mini option," Sheila Brunstad, WCD data base administrator, said.

Instead, the department set up an internal task force to study the problems of handling insurance claims. The task force concluded that "we were committed to going to DBMS because of our need for on-line user access to information," according to Hittle.

"We were already familiar with Intel Corp.'s System 2000 through another state agency that was using it," she continued.

Side Benefits

After interviewing all WCD personnel who were involved with processing thoughout the claim life cycle, the department realized the side benefit of greatly improved interdepartment communication: "When we disbanded the task force we had an outline of needs, including processing parameters, reports needed and so forth. We began by breaking the conversion process into stages, corresponding to the needs of the various departments that handle the claims," Hittle claimed.

The WCD consists of several divisions — Accident Prevention, Compliance, Evaluation, Callahan Rehabilitation Center, Fiscal — that oversee the claim at each stage.

"Each has particular information needs," Hittle continued. "System 2000 enables us to key data so that it is relevant to a wide range of people . . . it is also significant that one division can enter or update information that is needed immediately by one or more of the other divisions."

The data base was loaded through executing a series of IBM CICS and Intel System 2000 programs. Claimant data was keyed through several fields and the rudimentary system became operational. An incremental addition of data base records that served the specified needs of the various divisions was the next step.

Data Overlaps

Now that several segments are up, WCD personnel are discovering some data overlaps. That defeats the very purpose of the data base, according to Hittle. "We will gradually go back and delete certain segments of the system to make it run more smoothly," she said.

More than 200 users are currently on the system, but eventually all 700 WCD staffers will have direct access to a terminal, Brunstad claimed. "We are especially pleased with the low resource usage required by System 2000, since we are just one of many users on the state computer. Even this large a system is not a drain on the CPU," she maintained.

Brunstad added that the low support needs of the systems are also a bonus, claiming to be the only person working to support System 2000 on a full-time basis. She also plans eventually to tackle a fiscal monitoring data base with Intel's help to monitor the rehabilitation funds that the WCD oversees.

'Swearing by or Swearing at Today?'

Travel Agency Finds GL Tool That Offers Something Extra

LAWRENCE, Kan. — Don Jones was looking for "something extra" when he went shopping for a general ledger system last year.

The director of accounting and data processing for Maupintour, Inc. admitted that his firm'a home-grown general ledger system needed a "complete overhaul," but all available staff programmers were tied up with in-house projects. It was then that management decided to purchase a package from an outside vendor.

Maupintour, a wholesale travel company that sells escorted tours to six continents through a network of over 20,000 U.S and Canadian travel agents, evaluated seven potential general ledger systems last fall. "Each would perform the required general ledger function . . . [but] we determined that something more was needed," Jone recounted. "We broadened our horizons to evaluate the expanded capabilities of four financial planning and modeling systems with general ledger modules."

Three Reasons

By January, the company had decided on Insight, a financial planning and modeling system from Interactive Program Product, Inc. (IPP) of New York. According to Jones, there were three reasons why Maupintour chose Insight:

- It was written specifically for an IBM System/34, which Maupintour already used.
- It offered a complete and documented general ledger module, which Maupintour lacked, and gave end users "what-if" modeling capabilities and reporting flexibility.
- "Insight was also written in our RPG-II code while most other systems used Cobol," Jone continued. "Our data processing staff felt that software not specifically designed for the System/34 contained many potential problems . . . [and] migrating to a larger computer system would be convenient with Insight, since there is an upgrade specifically written for an IBM System/38."

No Problems

Maupintour has 21 IBM 5251 CRT workstations, and it was important that the installation of the new software not jeopardize the operations and response time of their many other functions, including on-line reservations, pricing, space availability and client and agent information. The Insight system went up without any problems, Jones claimed, and "it requires almost no assistance from data processing."

The menu-driven system enabled the company to structure its own financial chart of accounts by developing parent/subordinate relationships, Jones added. For example, the total amount of salaries for the Escorted Tours Division is a parent account, and the salaries from each department in that division are a subordinate account.

Insight is also being used to produce comparative data by month, year-to-date and prior year actual figures for the monthly balance sheet, statements of income and operating expense reports. The one-hour preparation time now needed for these reports is "a considerable improvement over the three days that were required for these same statements using the old general ledger system," according to Jones.

Jones said it would have taken the Maupintour staff three months or more just to modify its exisitng system and code financial reports. "More importantly, after all those countless programming hours, an in-house developed system would not have yielded the financial planning/modeling sophistication and report-writing flexibility we have come to appreciate with Insight."

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EDITORIAL

Bunk!

In biblical times, people rid themselves of sin by symbolically placing their guilt on the head of a goat and sending it into the wilderness.

The times have changed, but the scapegoat mentality has not. Today, instead of a goat, computers are frequent bearers of the sins and mistakes that seem to plague society. Since Eniac I was first plugged in, computers and data processing have been blamed for everything from unfair parking tickets and junk mail to uncontrolled invasion of privacy.

In fact, a San Francisco-based group is devoting itself to resistance against computers and automation which, it claims, are merely tools to exploit more work from fewer people.

Bunk!

Computers may never win the affection of those who have been on the receiving end of the "Denver Boot" or those who have been sent yet another form solicitation from an overly personal CPU. But lost in the scapegoat mentality is the fact that a computer helped track down and convict Wayne Williams, who was charged last year with the murder of two Atlanta children and implicated in the deaths of 26 other area children.

The Atlanta computer was used to assimilate the mountains of data collected by 10 separate law enforcement agencies investigating the string of deaths that spanned more than 22 months [CW, Aug. 16]. The system will soon be available to law enforcement agencies across the country.

Nor should we forget that computers are used in some states to track down fathers delinquent in child-support payments. And a bill is presently being pushed by Sen. Edward F. Kennedy (D-Mass.) that would allocate funds for the development of a computerized data base to stem the rising tide of kidnappings, currently estimated at 150,000 per year. (Some people may cry invasion of privacy, but that won't count for much with a parent hunting for a missing child.)

So while computers may prove handy scapegoats for those decrying the sins of modern society, the finger-pointers should remember that computers are just machines. If they acquire bad reputations, they receive them from the people who understand them the least and despise them the most.

DATA PAST

Five Years Ago
Aug. 22, 1977

TORONTO — The issue of human rights for Russian citizens arose during the International Federation for Information Processing (Ifip) Congress '77 here as more than 100 computer scientists signed a petition supporting the release of scientist Anatole Sharansky, who is in Soviet prison.

In addition, the Association for Computing Machinery's (ACM) executive committee, which held a meeting in conjunction with the Ifip show, adopted a resolution refusing to participate in Soviet-sponsored conferences because of that country's "restraints on computer people."

The ACM resolution stated that it would not "cooperate with any meeting in the USSR."

The 15 participants in the Second International Chess Tournament also signed a letter to the Russians calling for the release of Sharansky.

Ten Years Ago
Aug. 23, 1972

BOSTON — It was a "gross neglect of responsibility" that the Association for Computing Machinery (ACM) did not have committees investigating whether computer applications are good or evil, the founder of ACM, Edmund C. Berkeley said.

The ACM founder recommended that committees be formed to investigate how computers could be used to increase the good of society. Berkeley told attendees at the association's 25th Anniversary Dinner that the Special Interest Group on Computers and Society was a "sample of tokenism."

He also encouraged DP professionals to use "social enterprise" to head off his prediction that mankind will be extinct in 500 years.

He stated that the use of computers in the Vietnam war "makes me ashamed of belonging to the computer field."

'The IRS wants to do a tax-dodger match on our draft registration files!'

LETTERS

Fact vs. Fancy

Computerworld's editorial "Don't Quote Me" [CW, Aug. 9] makes a familiar mistake regarding audit services: A Big Eight audit is not the same as a consulting engagement.

When the Big Eight accountants (note that they are accountants, *not* auditors) come into a company for an audit they are concerned with the accuracy of the financial data. They are guided by a severe code of conduct and can only issue opinions supported by fact.

Unfortunately, the Big Eight firms also do consulting engagements. These engagements are not limited by any code of conduct and can express both subjective and objective opinions.

Consulting engagements are not audits and are usually designed to mirror the expectations of the senior corporate officer paying for the service.

The accountants are correct in stating there is no conflict of interest: The audit is based on fact, the engagement based on fancy.

The DP manager targeted for a Big Eight engagement has one slim hope for survival short of capitulation: participate in drafting the engagement letter.

This letter controls the extent of the review and can outline the methods to be used.

The DP manager should require that any recommendations made by the certified public accountant firm be presented with factual, objective data that supports all recommendations.

It is unlikely the CPAs will agree to this wording, but at least the DP manager can open a discussion of fact vs. fancy.

J. Socha

Los Angeles, Calif.

Conflict of Interest?

The editorial "Don't Quote Me" [CW, Aug. 9] was one of the most unfair editorials I have ever seen.

I have been a certified public accountant and a data processing consultant for 11 years. The first nine of those years were spent with one of the Big Eight CPA firms. Before I entered consulting, I spent six years in industry working for large firms that often used their CPAs and other consultants.

In all that time I have not seen a single instance in which a DP manager (or a lowly programmer, for that matter) was fired at the direction of a CPA.

To the contrary, my colleagues and I usually suffer through an engagement in which an incompetent professional is involved because hiring and firing is a management prerogative. CPA firm consultants are extremely careful not to take on management roles within their client organizations (because of the independence requirements of the audit).

CPAs can be as helpful to a data processing installation as any other consultant. In fact, they may be more helpful because they are more familiar with the client through the audit relationship.

Joseph A. Leubitz
Checkers, Simon & Rosner
Chicago, Ill.

Computerworld welcomes comments from its readers. Preference will be given to typed, double-spaced letters of 150 words or less. Letters may be edited for purposes of brevity and clarity. Letters should be addressed to Editor, *Computerworld*, 375 Cochituate Road, P.O. Box 880, Framingham, Mass. 01701.

THE DATA CENTER / John P. Murray

Weighing the Merits of a Charge-Back System

The question of whether or not to charge clients for the services provided by the data center is one that often generates considerable discussion between management information systems (MIS) clients and the management of the data center.

Having managed data centers in charge-back and non-charge-back (or free) situations, I feel the charge-back method possesses sufficient merit that it should be installed.

Why? There are several valid reasons. A brief discussion of each of the more important may help convince those who are skeptical to consider more seriously using such a system.

'The typical data center manager has enough problems. Being forced to defend and explain a complex charge-back system should not be one of those problems. With charge-back systems the goal should be make it simple — keep it simple.'

Businesslike Basis

Perhaps the salient rationale for the use of a data center charge-back system is that it puts the data center operation on a more businesslike basis. The data center, as all data center managers know (but some clients tend to overlook), is not a free service.

Those who avail themselves of the services provided by the data center should at least be made aware of the cost of that service. The installation of a charge-back system places a value, expressed in dollars, on the data center service.

Some organizations allow departments to use either the in-house data center or a service bureau to process their work as they see fit. Unless there is a charge-back system in place, the clients have no way of determining which method, in-house or service bureau, is the most cost-effective.

Effective data center management should be able to produce at costs that will compare favorably with those of a service bureau.

If not, clients should take their work outside. In any event, without any knowledge of the in-house charges, informed comparisons cannot be made.

Expenses can be allocated to specific systems and jobs. A high level of detail can be produced about the charges for these jobs. This provides two benefits to clients: They can decide the value of a particular job, based upon its cost, and they can work with members of the data center staff to at least consider approaches to reduce the cost if that is deemed desirable.

This can be a valuable tool in these times of increased awareness of the need to control expenses.

The charge-back system can be used as a subtle tool to influence the behavior of data center clients. It may be that the second or third shift is lightly loaded, while the first shift load is too heavy.

Prices can be set so that it will be to the client's advantage to move some of the prime shift work to the second or third shift.

Printing Problem

The data center manager may feel that too much printing (much more than is necessary) is being done. Upward adjustments of printing charges can help reduce these demands. It may be advantageous to move more of the work to an on-line environment, to disk rather than tape processing again.

Adjustment of the charges for different types of processing can help influence the way in which work is processed.

Charge-back systems can be developed within the organization or software packages can be purchased. As is the case with any situation where good software packages are available, it makes much more sense, both economically and practically, to purchase a good package.

An investigation of the packages available will produce at least several that will do the work required.

A salient consideration with the installation of a charge-back system is to make certain the method used to develop the charges is as simple as possible.

While the development of some complex, esoteric charge-out method may present technical challenges, doing so is not in the best interest of the data center.

The method that is comprehensive, flexible and easily understood by the client who authorizes the expense is the one to use. A client who questions what he feels to be an excessive usage charge and ends up feeling he has been the victim of a shell game due to the complex method used to develop the charges is not a happy client.

The typical data center manager has enough problems. Being forced to defend and explain a complex charge-back system should not be one of those problems. With charge-back systems the goal should be make it simple — keep it simple.

The use of a charge-back system has its drawbacks. It does impose extra work on the data center. It does require increased discipline and management control.

Use of the charge-back system will highlight data center reruns, which may have been hidden because no one outside the data center knew they were occurring.

When the clients review their charges and ask for an explanation of the charges for a weekly run that was processed seven times in a four-week period — for which they have been charged for each run — hostility may arise.

On balance, the benefits of a data center charge-back system outweigh the problems.

In well-managed data centers, the charge-back system will help demonstrate that a good job is being done. In poorly managed data centers, the installation of the charge-back system will increase the anxiety level for members of both the data center staff and data center clients.

In the long run, however, the charge-back system can work to improve the data center operation.

Murray is director of MIS for Ray-O-Vac Corp., Madison, Wis. He is responsible for worldwide MIS activities. Murray has 20 years of DP experience, 10 of which have been devoted to the management of data centers.

GETTING AHEAD IN DP / Donald J. Berardo

How to Fight 'Memo Pollution'

Memos fly around corporations like seagulls around a wharf, and like seagulls, they can be pests or assets. They can also save time or waste it.

To communicate effectively, be sure that you aren't just adding to memo pollution. And when you must write a memo, remember that your message is competing with many others for attention and action.

First, ask yourself: Do I really need to write this memo? Will a phone call or quick visit get faster results? Is a call or visit a more appropriate way to convey my message?

Generally, memos should be used for complicated communications that need to be "documented" for future reference or that must go to a group of people simultaneously.

'Creating' a Memo

There are a number of different ways to "create" a memo. The ideal method is by dictating machine, especially if your position requires you to send memos frequently. If you don't have one, try to get access to one or convince your superior to give you one in order to save you, and thus your company, time and money. Some companies have transcribing functions that can be used through the telephone system.

The second best way is dictating to a secretary. This is second best because it requires twice as much time: The secretary must first take the memo down in shorthand, then read it back and type it. By contrast, when you use a dictating machine, the secretary only has to go through the copy once.

The last alternatives are writing out the memo longhand or rough typing it yourself. Both these methods take much longer and lead to time management trouble (unless you are a fast typist).

Be Brief

Whichever method you choose, always keep one guiding principle in mind: Be brief and to the point. Don't waste time trying to come up with a creative masterpiece that covers all the salient (and not-so-salient) points in great detail and length. The longer the memo, the less chance it has of being carefully read.

Try to put the entire memo on one page. Put a headline or action paragraph up front that tells the reader why he is receiving this memo and what you want him to do.

Before sending it, think carefully about who really needs to receive this information. Distribute it only to those people you want to act on it. Some people simply disregard a memo with multiple addresses, figuring that someone else must be taking care of it.

You may sometimes want to keep others informed of what you are asking a person or a group to do. In that case, indicate it as a "carbon copy" (CC) on the bottom of the memo. These people then know that the memo is only for their information and can read it accordingly.

There may be situations in which you want to share a copy with someone for his information, but don't want the addressee to know. (For example, you want your boss to know what you have decided, but don't want the recipient to think that you have to check everything with your boss.) In this case, send a "blind carbon" (BCC) and do *not* show that on the bottom of the memo.

Finally, there are ways to save time when *responding* to a memo. Consider just writing your response on the bottom of the memo you have received and sending it back. If you need an historical record of the communication, photocopy the piece before returning it.

Sometimes, no response at all is necessary. If so, save yourself, your secretary and your readers some time by *not* replying.

Memos are especially valuable as aids for follow-up action and often should be put in a special follow-up file. They are also valuable for documenting what has been agreed to by you (and others) or what position you took on an issue.

But they are only valuable if they aren't abused, and if they save — not waste — your time and that of your readers.

Berardo is a management counselor and career therapist. He is a vice-president with the Meld Group in West Hartford, Conn., publishers of a monthly newsletter on management development.

HUMAN CONNECTION / Jack Stone

Good Management Makes the Data Center

This is the conclusion of a 17-part series on how to suceed as a data center manager.

This series has concentrated on two major themes. The first theme is that all the newest technology around will not make DP managers successful unless they operate their centers in accordance with the fundamental principles of good business management.

The second point is that it's a rare DP manager that does it acceptably well.

These principles should hardly be a mystery to the reader, but for the record here are some of the major ones discussed in the series: realistic development task planning; expert communications with the user; responsible control over shifting task priorities; building of cooperative systems teams; and the ability to deal effectively with top management.

Concluding Assessment

After many interviews with the staff of the Catholic University of America data center (CUA), my concluding assessment is that the CUA center is indeed successful, mostly because its management team pays close attention to good management practices, particularly in the area of "follow-through."

Karl Thomas, director of the center, had these concluding thoughts about business systems success at CUA:

"If our top executives and user constituencies were asked the question: 'Is the center successful?' I would not expect a unanimous outpouring of accolades, but I would say that the vast majority would agree that we have performed in a creditable and responsible way for the university.

"Our Administrative Systems Group is sensitive to the wide-ranging information systems needs of the university. This awareness helps us adapt to new requirements resulting from changes, internal and external, in the ways in which the university does business. Sometimes we can anticipate the changing information needs before the user does.

"We must do so; otherwise we are not being responsive to the needs of top management. Working with the various systems, our key people are able to develop an understanding of how the data in individual systems can be brought together to provide meaningful information for the decision makers.

"This sensitivity also helps us to address one of our major challenges: the ability to sort out the difference between what an administrative user says he wants and what he really needs. As you know, this difference can be substantial, particularly in cases of new or unknowledgeable users.

"We work hard to negotiate a compromise between what a user would like to receive and what is feasible to produce within available resources, hoping we are still friends after the discussion is over.

"We have learned that agreements of this nature are key to avoiding failures of communications with the users, eliminating 'firefighting' conditions and ensuring that deliveries of our products are on time.

"I am pleased with the ways in which we manage our resources — people and technology. We want hardware that works reliably, not necessarily the newest, and we look at cost-effectiveness very closely.

"We seek technical personnel that can function well in a team environment and avoid 'all-stars' who refuse to come to work during regular hours. We search out techniques to help make working here an interesting, rewarding experience, instead of a grating drudgery.

Letters to Stone should be addressed to him at Box 270, 1377 K St. N.W., Washington, D.C. 20005.

LETTERS

Confusing People

The oldest joke in systems analysis is: "There is nothing so simple that it can't be made difficult." Too many DP types take this humor literally and make it a working motto.

Ken Leebow's excellent letter to the editor [CW, July 19], if anything, understates the case. The sad fact is that there's a lot of money to be made in the business of confusing people.

Less well understood, but just as true, is the manager who views himself as a technician or politician rather than as an administrator and gains a great deal of personal satisfaction out of complicating the straightforward.

Michael H. Agravoff
Data Security Administrator
Hartford Insurance Group
Hartford, Conn.

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LETTERS

Healthy Cobol

After reading Peter D. Lamasney's "Greater Programmer Productivity Wrong Focus" [CW, April 26], one comes to the conclusion that either Lamasney's background did not include Cobol programming or like most members of our industry he had never seen healthy Cobol coding written as it was originally conceived, more than 20 years ago. That is, clearly understandable, source-documented and standardized coding.

These conclusions stem from Lamasney's two misconceptions, which are the basis of his article.

First, his erroneous idea that structured programming has failed because programmers have an artist temperament and therefore cannot be managed.

The failure of structured programming has to be laid at management's door. Most managers have not been able to recognize what it can and cannot due ergo their efforts are misplaced.

Structured programming can isolate each function of a program. In that sense and only that sense it makes maintenance simpler. By itself structured programming does not make Cobol source coding understandable.

Isolating a function is only productive if you can recognize how and what is being isolated.

Therefore, structured programming can only be beneficial if written in healthy Cobol. What I am saying is that clarity of source coding is the key to programming productivity and structured programming is a contributor not a complete answer.

Second, I agree that a well laid out system is most desirable. What I disagree with is his assertion that a well-planned system will eliminate the need for future maintenance. This is not so, unless Lamasney expects his users and systems analysts to be clairvoyant. He would do well to accept program maintenance as an integral part of our industry or he will continue to come up with invalid answers.

At any rate, I assure Lamasney it takes creativity to write source coding that will be clearly understandable to the maintenance programmers who will eventually follow. It is very easy to fall into the trap of subjectivity and think because you understand it everybody else will understand it.

Remember, healthy Cobol, to all intents and purposes, has never been written in our industry. What has and still is being written is what I term broken Cobol. Broken Cobol, like broken English, is difficult to understand.

The result is what we have today in data processing — excessive programming maintenance costs that are all but choking our industry.

This is due to management's long-time misconception that healthy Cobol takes longer to place into production than broken Cobol. The opposite is true.

Whatever extra time is spent in clarity coding is more than compensated for during the testing and debugging phase.

In defense of Lamasney, I will say his defeatism in terms of programming productivity is understandable. His experience, like other presidents of corporations, is with too many software packages and concepts that were proven to be costly failures in the quest for programmer productivity.

Only when our data processing industry, through management, insists on healthy Cobol instead of broken Cobol will we see a dramatic reduction in program maintenance costs and a related increase in program productivity.

Jerry Sitner
Sitnerology
New York, N.Y.

Where's the Evidence?

Computerworld's editorial on conflicts of interest within Big Eight accounting firms ["Don't Quote Me," CW, Aug. 9] addresses an important issue in a totally irresponsible manner.

- You provide no evidence, only innuendo, despite the fact that your sources have changed jobs and are thereby protected.
- You display apparent ignorance of the avenues available to an aggrieved DP manager for redress. My own experience says that a complaint to the American Institute of Certified Public Accountants would bring a prompt investigation and swift disciplinary action.
- You imply that the alleged abuses are rampant within the Big Eight — all offices of all firms are equally guilty. My own experience says that abuses such as you describe are exaggerations of isolated incidents in one or two offices.
- You omit any mention of alleged abuses by other types of "consulting" firms — hardware vendors who recommend upgrades, body shops who recommend extensive enhancements and so on.
- You ignore the obvious fact that DP managers who are so easily intimidated by outsiders are probably incapable of performing their jobs satisfactorily anyway.

You owe it to both of the industries you represent — data processing and journalism — to promptly and fully address the issues above.

William R. Duncan
President
Duncan Associates
Beverly, Mass.

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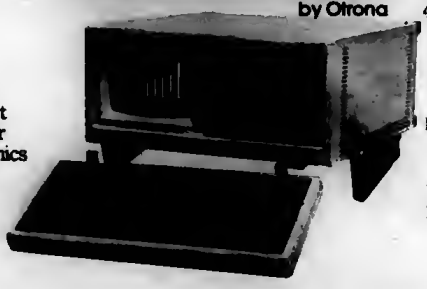

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CICS Monitor Introduced By Highlander

OREM, Utah — Highlander Systems, Inc. has introduced a software product that reportedly allows a technical staff to monitor screen images of remote terminals.

Intended for users of IBM and plug-compatible mainframes running under OS or DOS/VS(E) with CICS, CICS/Communications Monitor was designed to allow terminal transactions to be logged into a file and permit the routing of IBM CICS error messages to a terminal or hard-copy printer.

The monitoring and logging functions are transparent to the remote terminal user. This product can also be used for system testing, user training and quality control, according to the vendor.

CICS/Communications Monitor is said to interface with CICS the same as any other user application, but requires a user exit with no CICS modifications.

The OS version is priced at $6,000, while the DOS version is priced at $3,000.

Highlander Systems is located at 335 S. 1000 E., Orem, Utah 84057.

IBM Users Gain '80 Census Tool, DBMS From SIR

EVANSTON, Ill. — A software package that reportedly processes data from the 1980 U.S. Census and a data base management system (DBMS) have been released here by Scientific Information Retrieval, Inc. (SIR).

Both packages run on IBM and plug-compatible systems running under OS with TSO; Control Data Corp. Cyber systems under NOS and NOS/BE; Sperry Univac 1100 and 90 machines-

(Continued on Page 40)

Graphics Service Bureau Adds Computer-Aided Drafting via T/S

By Susan Blakeney
CW Staff

TORRANCE, Calif. — Computer-aided drafting on a time-sharing basis has recently been added to the offerings of Automated Design Centers (ADC), a graphics service bureau here.

The service, which reportedly supplies the computer-aided drafting for automated generation and maintenance of engineering drawings, utilizes the McDonnell Douglas Automation Co. Unigraphics system, a set of programs that runs on Data General Corp. Eclipse minicomputers at ADC.

Drawings are created by draftsmen using graphics terminals connected to the computers and are produced by a high-speed plotter, the vendor said.

Draftsmen at ADC can reportedly work from a client's engineering sketches, old drawings, modified plans or other source documents. Acording to the vendor, the finished product is delivered on the customer's title block vellums or title blocks can be provided on blank vellums. Customers can also receive a magnetic tape with the drawings recorded in digital form, the vendor said.

Exact Matches

Once the drawings are prepared on the ADC system, they are stored by the computer for later retrieval. In this way, engineering changes can be made with the new drawings exact matches to the old ones in style and convention, the vendor said.

As a library of drawings is built up, sections of previous drawings can be recreated instantly and combined with new work in preparing similar drawings, according to ADC.

This system can also reportedly be used to generate three-dimensional computer models for critical interference and clearance checks, to develop flat pattern layouts of sheet metal parts and for design and layout of ducting transition elements.

According to Ann Morley, of the Framingham, Mass.-based International Data Corp., it was not until 1981 that interactive graphics services for computer-aided drafting on a time-sharing basis start cropping up.

"Graphics have never been so actively marketed in the past — it's an emerging market opportunity, Morley claimed."

Morley said that graphics were often thought of as a "luxury item" in the past, but companies are now striving to repackage these products to make them more attractive and more widely accepted. She also added that the marketplace for computer-aided drafting graphics services "is still in it's infancy."

ADC can be contacted at 19401 South Vermont Ave., Building B-100, Torrance, Calif. 90502.

Operates With Eclipses

DG Has 32-Bit Compiler for RPG-II

WESTBORO, Mass. — Data General Corp. has added a 32-bit optimizing compiler, an interactive screen section and a screen generator to its RPG-II programming language.

The enhanced RPG-II and transaction processing management software (TPMS) were designed to operate with any Eclipse information system under either the 16-bit AOS or the 32-bit AOS/VS.

The screen generator unit is said to let users design screen formats interactively for RPG-II and DG's TPMS. The user defines data fields on a terminal screen and answers questions about field characteristics and attributes. When used with RPG-II, the screen generator unit generates a file of RPG-II screen specification code, the vendor said.

The format of the new interactive screen section reportedly

(Continued on Page 40)

System 2000's CDC Users Get Automatic Data Base Builder

SANTA CLARA, Calif. — Intel Corp. has announced Create, which it described as an automatic data base builder for the version of its System 2000 data base management system which supports Control Data Corp. equipment.

Through a conversational language, Create prompts the user for information and then generates data base definitions and loads existing data, the vendor explained.

Create reportedly defines data bases, ensures that the data is compatible with the data base definition, converts existing data to loading format and enters the data. It also estimates the size of the data base files.

Create is priced at $20,000. Intel is at 3065 Bowers Ave., Santa Clara, Calif. 95051.

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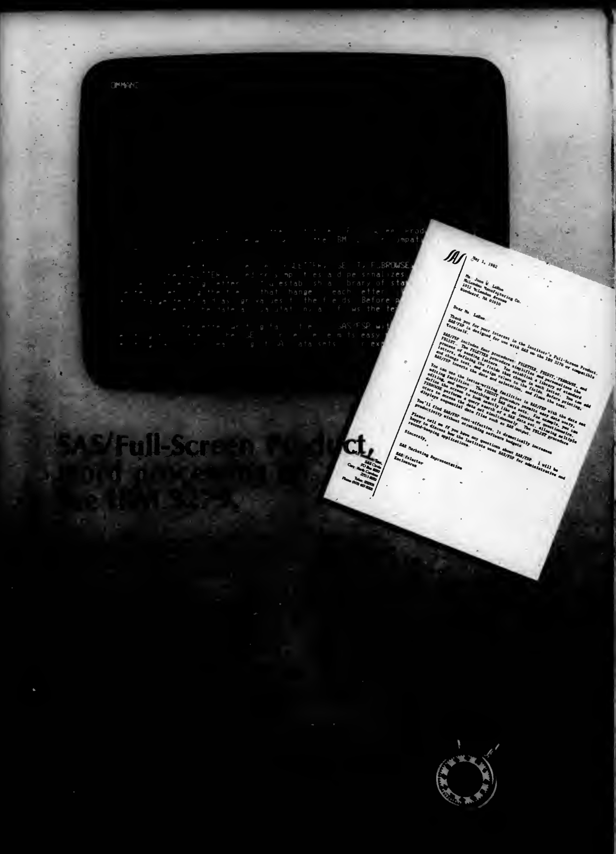

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Program Series Provides MVS Users With Interface

BURLINGAME, Calif. — A series of programs designed for users of IBM and plug-compatible MVS systems said to provide a consistent interface for performing all common utility functions without the need for JCL statementa has been announced here by The Bridge, Inc.

The Utility Interface reportedly eliminates repetitive tasks involved with utility usage. According to the vendor, this product will permit operators and end users to perform their own utility functions, reduce wasted machine resources caused by reruns, reduce training and allow for installationwide defaults.

This product consists of more than 200 modules and works in batch or interactive mode. It can be installed in less than an hour, according to a spokeswoman for the vendor.

The Utility Interface sells for $4,000. The Bridge is based at 1485 Lakeview, Burlingame, Calif. 94010.

'Utility-Plus' Copies Data Sets For IBM CPUs

McLEAN, Va. — A utility that reportedly copies, updates in place and dumps all or part of a data set has been released here by Advanced Information Systems, Inc.

Utility-Plus is a multiple-purpose programmer aid designed for IBM and plug-compatible mainframes running under OS, VM or VS with TSO or CMS. Programmers can retrieve and manipulate data from any type of input file, according to the vendor. Records can reportedly be selected by key, generic key, relative block number, relative record number, disk address or sequence field. It converts VM minidisks to OS data sets and offers IBM's Vsam, Isam and Bdam capabilities.

Utility-Plus sells for $3,300. Advanced Information Systems is located at 7923 Jones Branch Road, McLean, Va. 22102.

Version 2.0 Out Of Pascal 8000

NORTH VANCOUVER, B.C. — Version 2.0 of the Pascal 8000 version 2.0 compiler developed by the Australian Atomic Energy Commission for use on IBM and plug-compatible systems is available here from Acumen Software Services, Ltd.

Pascal 8000 reportedly performs on the IBM 360, 370 and 30 series and compatible mainframes under OS, OS/VS and VM operating systems (MFT, MVT, VS1, SVS, VS2, MVS and VM/CMS), as well as on the General Electric Information Services Co. Mark 3000 time-sharing system. The compiler is written in Pascal and is said to produce standard IBM object modules, which may be linked with object modules produced by other language compilers such as Fortran and assembler.

The compiler is available for a one-time license fee of $2,000 for commercial users and $750 for universities, plus a $250/year maintenance and enhancement fee. The North American distributor of the product is Acumen Software Services, Ltd., P.O. Box 86787, North Vancouver, B.C., Canada V7L4L3.

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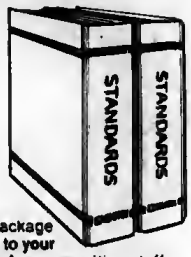

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'Unidis Wholesale' Extended To Univac 1100 Series Users

BLUE BELL, Pa. — Sperry Univac has announced the extension of its Unidis Wholesale applications software program to users of Univac 1100 series computers.

The Unidis Wholesale on-line interactive system, formerly only available to Univac System 80 users, was designed for use in the distribution industry for wholesale warehouse operations, according to the vendor. It is said to interpret how orders will be priced, filled and shipped and how stocks and inventories will be affected.

Unidis Wholesale consists of two products, the Order Entry/Stock Control and Inventory Management. The former can be installed separately, but for optimal control the vendor recommends that it be used in conjunction with the Inventory Management package. Installation of Order Entry/Stock Control is a prerequisite for Inventory Management.

The Order Entry portion reportedly performs order entry and processing functions, makes inventory adjustments, generates financial transactions and tracks shipping and inventory cycles. The Stock Control part follows goods received from arrival at the warehouse through quality control operations, to the maintenance of stock on hand, the vendor said.

The Inventory Management system helps the distribution manager control inventory by performing demand forecasting, purchasing, parameter calculation and review and simulation stock analysis and reporting, according to the vendor.

Both packages are priced at $802 each. Univac can be reached at P.O. Box 500, Blue Bell, Pa. 19424.

Electronic Edition of Index Bows For Software Engineering Tools

SAN FRANCISCO — Software Research Associates (SRA) has announced the availability of an electronic edition of its *Software Engineering Automated Tools Index*.

This product is a compendium of information on more than 650 automated software engineering support tools gathered from both public and private sources. It reportedly offers the capability to search the tool description data base automatically, using special search software.

Descriptive data about each software tool is stored as a single text file in a hierarchically ordered directory, the vendor said. Recursive searches can be used to locate the set of tools that match a client's needs on a user-specified key word or group of keywords.

The electronic edition tape can be run on any system capable of reading 1600 bits/in. and nine-track tape. It can be used on any Ascii or Ebcdic terminal, according to the vendor. It costs $1,950 for a single-user system, and quarterly updates cost $850/year. The information is also available on a time-sharing basis and as hard copy. The paper edition of the index sells for $185; updates cost $85/year. Further details can be obtained from SRA at P.O. Box 2432, San Francisco, Calif. 94126.

SIR Unwraps Software, DBMS

(Continued from Page 37)

Honeywell, Inc. CP-6 systems; Digital Equipment Corp. VAX-11 machines; Prime Computer, Inc. minicomputers; and Perkin Elmer Corp. systems.

SIR/Censys is aimed at demographers, social scientists and census data analysts. It retrieves census data for analysis and comes with a range of reporting options including tabular output, ranked and sorted reports, cross-tabulation capabilities, reports of geographics structure and identifier codes and user-specified custom reports, according to the vendor.

SIR/DBMS was designed for researchers and business managers.

The DBMS provides editing and checking facilities, data security and direct interface with statistical packages such as SAS Institute, Inc.'s SAS; SPSS, Inc.'s Statistical Package for the Social Sciences; and the Bio-Mathematical Data Processing system from the Department of Biomathematics at the University of California at Los Angeles, the vendor said.

SIR/Censys and SIR/DBMS are available for licensing for $3,000 and $12,000, respectively, for the first year, with annual renewal fees of $1,500 and $4,320, respectively. Further details can be obtained from SIR at P.O. Box 1404, Evanston, Ill. 60204.

Three Products Added to RPG-II

(Continued from Page 37)

consists of several input fields with specific attributes. RPG-II screen formats are processed through the calculation section of the program, the vendor said.

The initial license for AOS RPG-II is $3,000; the initial license for AOS/VS RPG-II is $5,000.

The enhanced TPMS is offered to users with DG's Software Subscription Service at no charge. The AOS TPMS initial license is $5,980; the AOS/VS initial license is $7,040, DG said from 4400 Computer Drive, Westboro, Mass. 01581.

'I Forgot Where I Put The Memory Board.'

'C-Isam' Bows For DEC Minis, 16-Bit Micros

SUNNYVALE, Calif. — Relational Database Systems, Inc. has announced the availability of an Isam subroutine library written in the C language for Digital Equipment Corp. minicomputers and several 16-bit microcomputer operating systems.

Called C-Isam, the library reportedly allows programmers to create and manipulate indexed files of records. Instead of searching through data record by record, users read the desired record by value, which acts to improve speed.

This product is available for DEC PDP-11 computers under DEC'a Idris operating system and on the IBM Personal Computer under IBM's PC-DOS and all Digital Research, Inc.'s CP/M and MP/M environments, the vendor said. The minicomputer version costs $1,350, and the micro version sells for $900. The vendor is based at Suite 503, 1208 Apollo Way, Sunnyvale, Calif. 94086.

Job Accounting Aids VAX Users

GOLETA, Calif. — A job accounting software package said to allow Digital Equipment Corp. VAX-11 users to establish variable billing and reporting periods is available from Signal Technology, Inc.

The Process Accounting and Chargeback System (Pacs) reportedly allows managers to define reporting periods from one day to 11 months, instead of VAX-11 accounting software'a usual monthly time period.

Pacs costs $4,900, fully supported, from the vendor at 5951 Encina Road, Goleta, Calif. 93117.

Softool Adds Control Aid

GOLETA, Calif. — Softool Corp. has added the Change and Configuration Control (CCC) Environment to its tools for software management, development and maintenance.

CCC is a system for the management of software changes and configuration control, and it is said to be an interactive tool that supports automatic program reconstruction.

CCC is available for Digital Equipment Corp., IBM, Data General Corp. and Gould S.E.L. computer systems. It costs $30,000 from Softool, 340 S. Kellogg Ave., Goleta, Calif., 93117.

'Checkpoint' Bows

SAN FRANCISCO — Smallframe Systems, Inc. has announced a Checkpoint/Restart package for IBM Series/1 processors under EDX.

The package reportedly allows application programs periodically to establish a checkpoint during processing. From that point, processing can be resumed in the event of a system failure.

The package costs $750 from Smallframe, 3621 Divisadero St., San Francisco, Calif. 94123.

DSS Modeled After Visicalc

REDMOND, Wash. — A decision support system (DSS) for Digital Equipment Corp. minicomputers said to be modeled after Visicorp's Visicalc software for micros has been released here by Why Systems, Inc.

Digicalc, currently available for VAX-11 superminis under VAX/VMS and for PDP-11s under RSTS/E, is an interactive planning and forecasting tool intended for accountants, engineers, managers, scientists and executives wishing to automate their number-processing functions.

The PDP-11 version of Digicalc sells for $4,000 and the VAX-11 version costs $6,000. Why Systems is located at 16902 Redmond Way, Redmond, Wash. 98052.

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Batch Service Based On Cray-1

KANSAS CITY, Mo. — United Information Services, Inc. (UIS) has announced the commercial availability of a new batch service based on the Cray Research, Inc. Cray-1 supercomputer.

Supra offers UIS clients a choice between interactive/batch and pure batch processing capabilities, according to the company. The service is intended for engineering and scientific batch-processing customers who process batch almost exclusively. In addition to job submission and file storage capabilities, Supra users will also have full access to the UIS library of Cray-1 software products.

Pricing varies depending on volume and includes processing, storage and connect charges. UIS can be reached through P.O. Box 8551, Kansas City, Mo. 64114.

Utilities Out On GE T/S

HINGHAM, Mass. — Information Software and Services, Inc. has introduced two utility packages available on the General Electric Information Service Company's Mark III time-sharing service.

Selective Catalog is said to allow the user to get a catalog listing of files and their attributes having a particular attribute, or for all files with similar names. This allows the user to see the catalog listing for only the files of interest, rather than for all files.

Purge Tonight is said to permit the user to specify files to be deleted on an overnight basis, rather than immediately. This allows the user to create and process temporary files without having to delete them. It also permits a user to "unpurge tonight," saving a re-creation or reload of an inadvertantly purged file.

The utilities cost $75 each from Information Software and Services, 10 Industrial Park Road, Hingham, Mass. 02043.

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Universal Software Adds Documentation Service

BOSTON — Universal Software Associates, Inc. has added a documentation management service to its list of consulting services.

Documentation of computer/business systems by this company reportedly frees up the client's in-house DP staff to keep up production. The analysis and data gathering is performed by a consulting team located at the client site, and their typical results include operations manuals, user guides, systems development specifications, data entry manuals and program maintenance manuals, a spokesman for the company said.

Costs are based on length and volume of project. Universal Software Associates is based at Suite 2810, 100 Summer St., Boston, Mass. 02110.

Documentation Service Targets Small DP Shops

CAMBRIDGE, Mass. — GWP Corp. has announced the availability of its software documentation system on a service bureau basis.

The system reportedly merges graphics and text to produce manuals for operations, data entry and program maintenance, user guides and systems development specifications on it's Programate Documentation Workstation.

According to the vendor, the service is intended for smaller DP shops without automated documentation systems and for larger operations that are considering the purchase of an automated documentation system.

Pricing is based on volume and job, and GWP is located at 196 Broadway, Cambridge, Mass. 02139.

Memorex, U.S. Equipment Sales & Service, San Tomas at Central Expressway, Santa Clara, CA 95052, (408) 987-1256

Finance Planning Package Runs on Wang Minis

LOWELL, Mass. — Wang Laboratories, Inc. has announced a financial planning package for its VS line of minicomputers.

Called the Interactive Financial Planning System (IFPS/Mini), the package reportedly can be installed on Wang VS 25, VS 45, VS 80, VS 90 and VS 100 systems. The package includes a problem-solving feature, which enables the user to build business models. Also included are "what-if" and impact analysis.

The software was developed by Execucom Systems Corp. and costs $39,500. Wang is located at 1 Industrial Ave., Lowell, Mass. 01851.

Program Generator

'Micro-Caps' Fits Burroughs B20

CLEVELAND, Ohio — Software Resources has introduced its Cobol Application Programming System (Caps) for the Burroughs Corp. B20 small business computer.

Micro-Caps is said to generate data input, report and and file maintenance programs. It also includes an application-oriented, menu-driven system.

Because the package generates Cobol source code, any unique logic required by an application can be inserted by the programmer, a spokesman said. Included in the generated programs are HELP messages to prompt all operator input fields and full editing of numeric input data. All screen report formatting is under programmer control; there is reportedly no preassigned or fixed field or columns.

The package is priced in the $2,000 range from Software Resources, 660 Dover Center Road, Cleveland, Ohio 44140.

System/34 Gains Tool For Modeling

OAK BROOK, Ill. — Professional Computer Resources, Inc. (PCR) has introduced Easyplan II, a financial modeling package for the IBM System/34. It reportedly features element-by-element calculations, external table retrievals, conditional processing, multiple automatic data entry features, predefined statistical functions, automatic row and/or column definitions and user-definable reports.

Easyplan II models are said to process information from data files and return new information to the files after model manipulation. What-if analysis, on-line display of models and the ability to customize lines of text are included in the product, a PCR spokesman said.

The system is menu-driven and has on-line documentation for every screen via the HELP key. It also includes security options. It is available for $795 from PCR, 2021 Midwest Road, Oak Brook, Ill. 60521.

Modeling Tool Runs on Wang VS

RICHMOND, Calif. — A Bill of Material/Labor (BM/BL) and Model Simulation package that runs on the Wang Laboratories, Inc. VS computer is available from Soft Pro Systems, Inc.

The material planning systems tool features automatic price/cost calculation and roll-up, multilevel BM/BL explosion, multilevel BM/BL explosion by product group and planned production requirement.

Base price of the software is $4,000 from Soft Pro Systems, 4121 MacDonald Ave., Richmond, Calif. 94805.

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Micro Notes

A hard version of DB Master, e file management software program for Apple Computer, Inc.'s Apple II Plus microcomputer, has been unveiled. The Special Edition, which will expand the storage capacity for data base users, costs $499 and includes program backup diskettes and documentation. It is available from Software, Inc. at 50 Belvedere St., San Rafael, Calif. 94901.

Micro Peripherals, Inc. has released AP-PAK graphics package, which provides graphics printing capabilities for Zenith Data Systems, Inc.'e Z89 and Z90 microcomputer systems. The product sells for $55, the vendor said from 4426 S. Century Drive, Salt Lake City, Utah 84107.

Gestetner Corp. has announced Mail/Man, an addressing package for the firm's microprocessor-based Gestetner Management System. The package can store 80,000 names and addresses. Names can be stored under 1,000 different categories for automatic retrieval. The package can be used to address labels and envelopes as well as to generate personalized letters and letter fill-ins, the vendor said. The package costs about $800. The processor is priced from $7,995, the vendor said from Gestetner Park, Yonkers, N.Y. 10703.

The business data base system Data Ace will now be sold by Computer Software Design, Inc., formerly Aregon Group, Inc. Data Ace is now available on the Radio Shack TRS-80 Model 1/III for $250 or, including Miller Microcomputer Systems, Inc.'e MMSForth software, for $375. Computer Software Design is located at 1911 Wright Circle, Anaheim, Calif. 92806.

A data base input system for the Zenith Data Systems, Inc. Z89 microcomputer running under Digital Research, Inc.'s CP/M operating system has been announced by Inforonics, Inc. Texterra custom-defined software costs $2,000 including installation; the Z89 can be purchased for $3,400 from the vendor at 550 Newtown Road, Littleton, Mass. 01460.

Omicron Software has announced two products for the IBM Personal Computer: Sort, e multikey sort/merge utility and Jobtrax, a new project management package to be used for planning and monitoring typical engineering, architectural and construction projects. The new products are being sold at $27 and $250, respectively, from Omicron Software, Suite 590, Building 57, Executive Park S. N.E., Altanta, Ga. 30329.

Selanar Corp. has announced e graphics software package for Digital Research, Inc.'s CP/M and MP/M based systems. SG-Plot reportedly provides software support for Selanar's graphics enhancements for the Digital Equipment Corp. VT100 and Televideo, Inc. 925 and 950 terminals. Priced at $450, the product can be obtained from Selanar at 437-A Aldo Ave., Santa Clara, Calif. 95050.

A data base management system called Scredit has been released from Integron Systems. It reportedly handles multikeyed 65,000-record Isam files, full-text and label printing capabilities and interfaces to all standard word processors. It currently runs under the Oasis operating system from Phase One Systems, Inc. It costs $299, the vendor said from Suite 2J, 300 W. 109th St., New York, N.Y. 10025.

Wicat Systems, Inc. has introduced Ultracalc, an electronic worksheet that analyzes data for financial planning and modeling. The worksheet runs on any 16- or 32-bit computer and offers business graphics, on-line help facilities and interfacing with external programs, according to the vendor. Its worksheet reportedly is not limited by main memory size. Ultracalc costs $500, according to the vendor at P.O. Box 539, 1875 S. State St., Orem, Utah 84057.

Pro/Tem Software, Inc. has announced Synopsis, e package that reportedly creates, updates, searches and displays an index containing the file name, disk identifyer and four lines of information ebout any CP/M file. The package eutomatically reads information from systems operating under Digital Research, Inc.'e CP/M or MP/M operating systems into its index. Nondocument files, such as spreadsheet programs, can be directly read into the package, the vendor said. The package costs $125, the vendor said from 2670 Cherry Lane, Walnut Creek, Calif. 94596 .

Digital Marketing Corp. has announced Active Trace, e programming environment for the firm's MBasic programming language. The package provides real-time information about e program as it runs. The package also provides cross-reference facilities and documentation. The package costs $125, the vendor said from 2670 Cherry Lane, Walnut Creek, Calif. 94596.

Data Retrival Corp. of America is selling the source code for the firm'e sort utility, trace debugging aid and generalized disk file manager designed for users of Intel Corp. packaged systems running under Intel'e IRMX operating system. The sort utility can be used by the applications program to sort in main memory an unlimited number of records using the Shell-Metzner technique. The trace debugging aid gives the programmer the capability to trace logic flow and variable values with real-time control of trace options, the vendor said. The disk file manager provides e series of functions to access randomly or sequentially any number of disk files, the vendor said. Each of the development aids are available on an 8-in. single density diskette or in e printout form for $300 including documentation. Both diskette and printout costs $350, the vendor said from 5600 W. Brown Deer Road, P.O. Box 23437, Milwaukee, Wis. 53223.

Central Point Software, Inc. has announced Filer, e utility package for Apple Computer, Inc. 35-, 40- and 70-track disk drives. The package contains e disk drive speed check, disk drive test, fast copy program and e file manager. The package costs $19.95, the vendor said from P.O. Box 19730, No. 203, Portland, Ore. 97219.

Associated Technology Corp. has announced e search service for microsoftware for IBM's Personal Computer. For $50 the firm will search its file of more than 1,000 programs. The firm charges $2 for every relevant package found. The company can be reached through R2, Box 488, Estill Springs, Tenn. 37330.

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Can Lease Satellite Circuits to Noncarriers

FCC Relaxes Restrictions on Comsat

By Jim Bartimo
CW Staff

WASHINGTON, D.C. — Heeding a congressional mandate to create greater competition in international data communications, the Federal Communications Commission (FCC) loosened restrictions on Communications Satellite Corp. (Comsat) this month but required it to lease a satellite circuit directly to users who request such a service.

Now "Comsat will be able to offer to noncarriers the services it presently offers only to carriers," said John Copes, attorney adviser to the FCC's Common Carrier Bureau.

Prior to the FCC decision, Comsat could provide satellite and earth station services only to AT&T and international data carriers, which would then lease the services to the public.

Comsat is now required to lease a satellite circuit to users, but the ruling also allows the company to offer the satellite circuit as competition to other common carriers.

If Comsat decides to compete with other international carriers such as ITT and Western Union, it will still face some restrictions, according to Copes. "If they elect to do so, they must compete through a separate corporation," he said.

The ruling also provides that Comsat must meet the restrictions that apply to other common carriers and give no special consideration to its own company — if it is formed, Copes said.

Most Likely Candidates

Large users will be the most likely candidates to use the satellite circuit that will now be offered directly, Copes said. Dow Jones & Co. was one of the companies requesting that a line be made available. "It's not going to be the guy that wants to send a telegram to his mother in Italy," Copes said.

It is not clear from the order whether a company like Dow Jones, once it has leased the line directly, will be able to sell use of the circuit to other companies indirectly, Copes said.

Copes explained that although FCC Commissioner Joseph Fogarty predicted that the ruling would eventually lead to the authorization of resale of communications services in the international market, this decision does not directly deal with the issue of resale and therefore no conclusions can be extrapolated.

Although the ruling forces Comsat to make a satellite line available, Copes pointed out that the FCC has only made it possible for Comsat to compete as a common carrier. "All we can do is make it as easy as possible; we can't force Comsat [to enter the market]," he said.

"The FCC reviewed carrier rates and found that they were not responsive to cost," Copes said. "We don't know that the rates are high, low or indifferent. But there is an indication that they're high, so this will put competitive pressure on to find out [if the rates are actually high]."

When asked how foreign communications companies reacted to the decision, Copes said that of the 200 nations involved, he expected "there are 200 different opinions."

Net Diagnostics Offered as Service Via Dial-Up Line

CHERRY HILL, N.J. — Avant-Garde Computing, Inc. has introduced a network management system for 8- to 32-line data communications networks that is available as a full-feature rental service. The Net/Man service is available 24 hours per day via a dedicated line from a subscriber's network control center to the vendor's operations center here, a spokesman for Avant-Garde said.

The Net/Man service is the rental version of the company's Net/Alert system and includes the same features. It monitors the status of the network, all lines and devices.

The service alerts operators to user-defined service degradations or outright hardware on-line failure with real-time color graphics, the vendor said.

Among the system's other features are the measurement and display of response times, message volumes and errors. Subscribers can supply their own 9,600 bit/sec synchronous modems and statistical multiplexers or may rent from the vendor.

The basic monthly charge for the service is $1,995.

More information on Net/Man is available from Avant-Garde Computing, 2091 Springdale Road, Cherry Hill, N.J. 08003.

Amdahl Adds Net Processor; Supports CCITT X.25 Protocol

SUNNYVALE, Calif. — Amdahl Corp. has introduced a high-capacity data switching processor that supports the CCITT X.25 packet-switching communications protocol. The 4410 network processor was designed for users who need to incorporate different makes and models of computers and terminals, located at various sites, into an integrated network based on X.25.

The network processor performs network access, concentration, packet switching and routing and centralized network control functions, according to an Amdahl spokesman.

It features variable maximum packet sizes from 32 bytes to 256 bytes, on-line and stand-alone network diagnostics, selectable packet priority and 450 packet/sec throughput expandable to 1,350 packet/sec for a single node.

Other features include line speeds of up to 64K bit/sec, network management and statistics collection, error detection and correction, unattended node operation, resource sharing and alternative route selection.

The network is said to support 20 X.25 links per packet processor unit. It will support varying line speeds from 600 to 64K bit/sec; line interfaces include EIA and RS-232C.

Call setup capacity is up to 10 local call/sec and 36,000 call/hour, a vendor spokesman said.

The price of the network starts at $140,000, the spokesman said from Amdahl Corp.'s Communications Systems Division, 2500 Walnut Ave., Marina del Ray, Calif. 90291.

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IBM-Compatible and Stand-Alone

Telex Introduces Pair of CRT Terminals

TULSA, Okla. — Telex Computer Products, Inc. has unveiled an IBM 3278-compatible CRT terminal and a stand-alone or small-cluster-environment 3270 controller/CRT terminal.

The Telex Model 178 is plug-compatible with the IBM 3278 CRT terminal. It is said to have all the 3270 attributes of the firm's standard 15-in. screen Model 278 CRT terminal and is 43% smaller and 54% lighter than the 3278.

It operates in a 3270 cluster-controlled environment and attaches to either a Telex 174 or 276 controller or an IBM 3274 or 3276 control unit. It costs $2,750.

The Model 476 controller/CRT terminal is said to allow users to cost-effectively utilize remote single-station operations under either binary synchronous communications (BSC) or Systema Network Architecture/Synchronous Data Link control (SNA/SDLC) protocols. It may be daisy chained up to a 16-device cluster utilizing the Telex 909 modem cluster adapter.

The Model 476B features the BSC protocol and uses reverse video and blinking fields. It costs $3,700. The Model 476S operates using the SNA/SDLC protocol and also costs $3,700, Telex said.

The firm can be reached at 6422 E. 41st St., Tulsa, Okla. 74135.

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Telex Unveils Color Display

TULSA, Okla. — Telex Computer Products, Inc. has introduced a color keyboard display featuring up to 3,440 char. read out. Plug-compatible and comparable to the IBM 3270 terminal, it is said to connect to an IBM 3274/3276 controller or a Telex 174/276 controller.

The Telex 279 Model 4 features a 14 in. diagonal nonglare screen with a detachable keyboard with more than 30 layouts including a single-key CLEAR and program function keys. Optional display performance features include a row and column indicator, key stroke counter, response time indicator and message printer.

The display is available for $4,250 from Telex Computer Products, Inc., 6422 E. 41st St., Tulsa, Okla. 74135.

Two Graphics Terminals Unveiled by Data-Type

MOUNTAIN VIEW, Calif. — Data-Type, Inc. has introduced two graphics display terminals — the Autograph Color X5A and the Autograph XK1.

The X5A features raster-scan technology, 511 color palette, zoom, pan, scroll, 80 characters by 24 lines, 96 Ascii characters, two RS-232C serial ports, 15 bit/sec transmission rates, detached IBM Selectric-type keyboard and a 14 in. diagonal screen.

The XK1 features 1,024 by 1,024 pixel resolution, a green-phosphor 15 in. screen; line, circle, arc, ellipse drawing; block fill; raster-scan technology; block/conversion mode; two RS-232 serial ports; 15 transmission rates (full- and half-duplex); and a detached keyboard.

Each color display costs approximately $5,000, available from Data-Type Inc., 2615 Miller Ave., Mountain View, Calif. 94040.

BBN Adds Raster Scan Unit

CAMBRIDGE, Mass. — BBN Computer Corp. has introduced a high-resolution text and graphics terminal that is said to combine raster-scan technology with the Motorola, Inc. MC68000 microprocessor.

The Bitgraph terminal features a black-and-white bit-mapped display of 1,024 pixels by 768 pixels that allows graphics to be combined with text and characters of different sizes and styles to be interspersed on the screen. The vertically mounted screen makes it possible to see and work with an actual-size 8½ in. by 11 in. page, a vendor spokesman said.

The terminal is available with either 128K- or 512K bytes of random-access memory. It also feature RS-232 and RS-422 High-Level Data Link Control interfaces.

The terminal is available for $4,995 from BBN Computer Corp., 33 Moulton St., Cambridge, Mass. 02238.

CRT Terminal Displays Time

STAMFORD, Conn. — National Computer Communications Corp. has introduced a CRT terminal with a built-in clock that displays the time of day on the 25th status line. The time of day display can also be transmitted to the printer at the operator's command.

The Videoterm terminal includes as standard features projected fields, reverse video, blinking, blanking, underlining, RS-232C printer port, flexible transmission rates, 22 preprogrammed function keys, time out and switchable international character sets, a vendor spokesman said. Optional features include a second page of memory.

The terminal is modularly designed with a detatchable IBM Selectric-style keyboard and a nonglare, tiltable, green screen, a vendor spokesman said.

The terminal costs $995 and is available from the National Computer Communications Corp., 260 West Ave., Stamford, Conn. 06904.

Emulation Package Runs on IBM Micro

IRVINE, Calif. — AST Research, Inc. has announced the AST-3780, an emulation package that reportedly allows IBM Personal Computers to transfer files with an IBM mainframe via binary synchronous communications (BSC) protocols.

The package allows the Personal Computer to emulate IBM 2780/3780 terminals. It runs under IBM's PC-DOS operating system and consists of emulation software on diskette and AST's Advance Communications Card, the vendor said.

The AST-3780 costs $945 from AST at Suite 104, 2691 Richter Ave., Irvine, Calif. 92714.

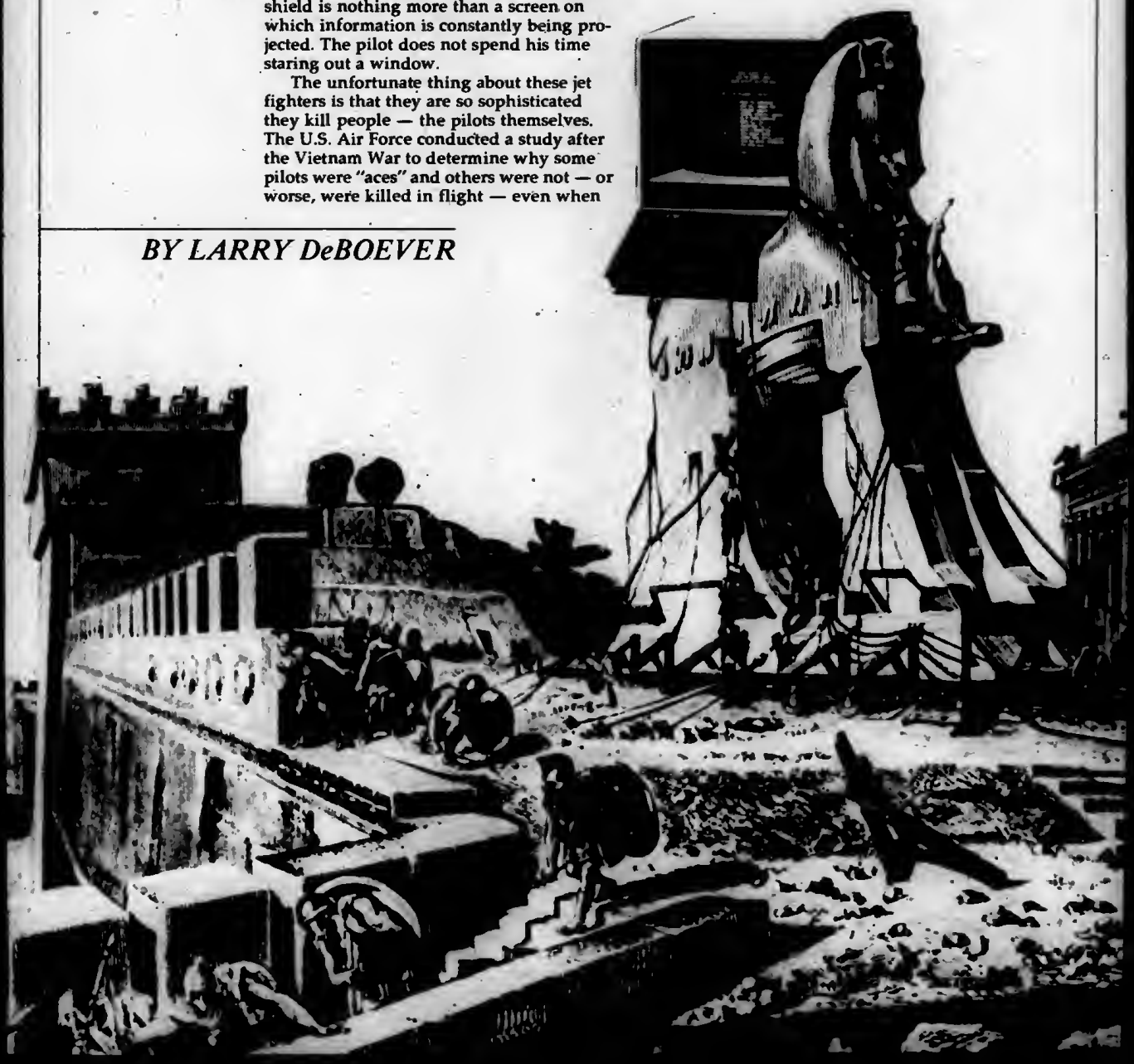
THE MYTH OF USER-FRIENDLY COMPUTING

Today's line manager is not unlike the pilot of a highly sophisticated jet fighter. He is in a position where he has to make a great many decisions very quickly, with a variety of complex, technical tools. Even though the manager's desk isn't moving at three times the speed of sound, sometimes it seems as if the information he's processing is.

The pilot has an overwhelming number of channels of information. Radar outputs need to be read. Radio channels need to be monitored. He scans for local and long-distance weather information, weapon systems data and information concerning altitude and fuel supply. The cockpit windshield is nothing more than a screen on which information is constantly being projected. The pilot does not spend his time staring out a window.

The unfortunate thing about these jet fighters is that they are so sophisticated they kill people — the pilots themselves. The U.S. Air Force conducted a study after the Vietnam War to determine why some pilots were "aces" and others were not — or worse, were killed in flight — even when

BY LARRY DeBOEVER



all had had the same number of combat missions. The research team concluded that the aces, upon discovering that they were in a combat situation, turned off all the information channels except one — the one that had to do with combat. (Of course, this was counter to policy.) Less successful pilots did not employ this technique and sometimes suffered fatal consequences.

The conclusion: Successful pilots knew they were being overwhelmed with information and that in a combat situation most of it was irrelevant.

And what are we doing to the line manager? We're giving him all the data he needs, but are we helping him? Not unless we give him tools to help him sift data and identify what is relevant to a particular situation.

The Myth

It is popular to talk about giving "real" end users access to corporate information resources. The increased acceptance of computer technology by non-data-processing personnel, advances in user-friendly software and data communications and the rapidly decreasing cost of computer hardware have all contributed to this notion.

On close examination, however, we find that end users very rarely have extensive access to corporate information resources.

End users are typically given access only to a limited extract of data taken from production applications. This is frequently in the form of an "information center," a concept that is being sold as a way to relieve production systems of the burden of end-user access and to provide the end user with a friendly environment (usually VM) and an array of unrelated user-friendly tools.

The desktop computer is conceptually very similar. On his desk the user has a friendly tool with powerful facilities that can manipulate data extracted from a host, thus relieving the host of some undefined processing burden.

The Drawbacks

But what do users really receive? The tools that are universally described as easy to use are not. Most likely they are easy to learn, which means that end users must still learn a syntax. This syntax is almost always described as "English-like." Maybe.

Despite "easy-to-use" and "English-like" tools, end users are in trouble if they want to do anything remotely complex. Just ask your managers to use any of today's report writers for a sophisticated query and see how long it takes them.

If and when end users overcome the learning barrier, they are confronted with less important administrative issues like, "How old is the data being accessed?" (Remember, they are only dealing with a copy of the data. Both the information center and the desktop computer deal with extracted, therefore out-of-sync, data.)

Another more basic issue concerns typing. Keyboards probably present the single greatest impediment to end-user access after syntax. Can we really expect top managers to hunt and peck for answers? No — that's why we provide them with powerful menus (forget about the development costs!) just to keep them from being frustrated about the typing. Unfortunately, in developing these menus we also give the executives a predefined set of data access paths.

When you step back and think about what line managers (that is, "real" end users) do with all the hard-copy reports, printouts and memos they receive, you find out that they browse a great deal of the time. They are not necessarily looking for specifics; rather they are seeking items of interest, curiosities, anomalies — things that should be looked at more closely.

The current approach to end-user interfaces (whether they are off-the-shelf packages or custom-built, menu-based query facilities) does not address this need.

The challenge is this: to give the executive a powerful tool that:

- Permits him to browse.
- Does not have a syntax, no matter how natural it could be.
- Provides access to production data.
- Does not require even minimal

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IN DEPTH

typing skills.

In the remainder of this article, we will explore each of these areas in more detail and then look at a few commercial offerings that satisfy one or more of these needs.

Need to Browse

Browsing through data is very akin to panning for gold. Users have to "slosh" a lot of data around before they discover the valuable flakes, which are always hidden on the bottom.

The Information Age has created tremendous problems for line management. Twenty years ago, line managers had very little information available to them, and what little they had was probably out of date. As a result, they could rely on intuition.

Today's line managers are not nearly as lucky. In fact, they are probably overwhelmed with all the available data. Just look at their desks. There are computer printouts on costs, revenues and budgets from Finance. There are printouts on staffing, turnover and training from Personnel. There are memos (and more memos) from subordinate staff. And if the line manager is really lucky, he has one or more MBAs on staff who are eager to apply the appropriate analytical tools to any problem, thereby inundating the line manager with even more data.

And the torrent continues. In their search for information, line managers can also select from a broad array of decision support software and commercial on-line data bases (such as those offered by Dun and Bradstreet) containing industry-related data. In addition, they can subscribe to the numerous industry journals and general business periodicals to remain well informed.

Putting It Together

With all this information available, where do line managers start searching for the causes and solutions to problems? Certainly the printouts, memos, reports, journals and on-line data bases are useful. But how do managers integrate that information? Where do they begin?

They sift. They scan. They look. They read. They take a briefcase full of paper home at night. They compare financial printouts with memos, memos with other memos — sifting until they find the underlying nugget. This is what is meant by "browsing." Printouts and reports are certainly helpful, but all too often their bulk and format counteract their usefulness.

Managers need a tool that facilitates the way they review their data.

Problem of Syntax

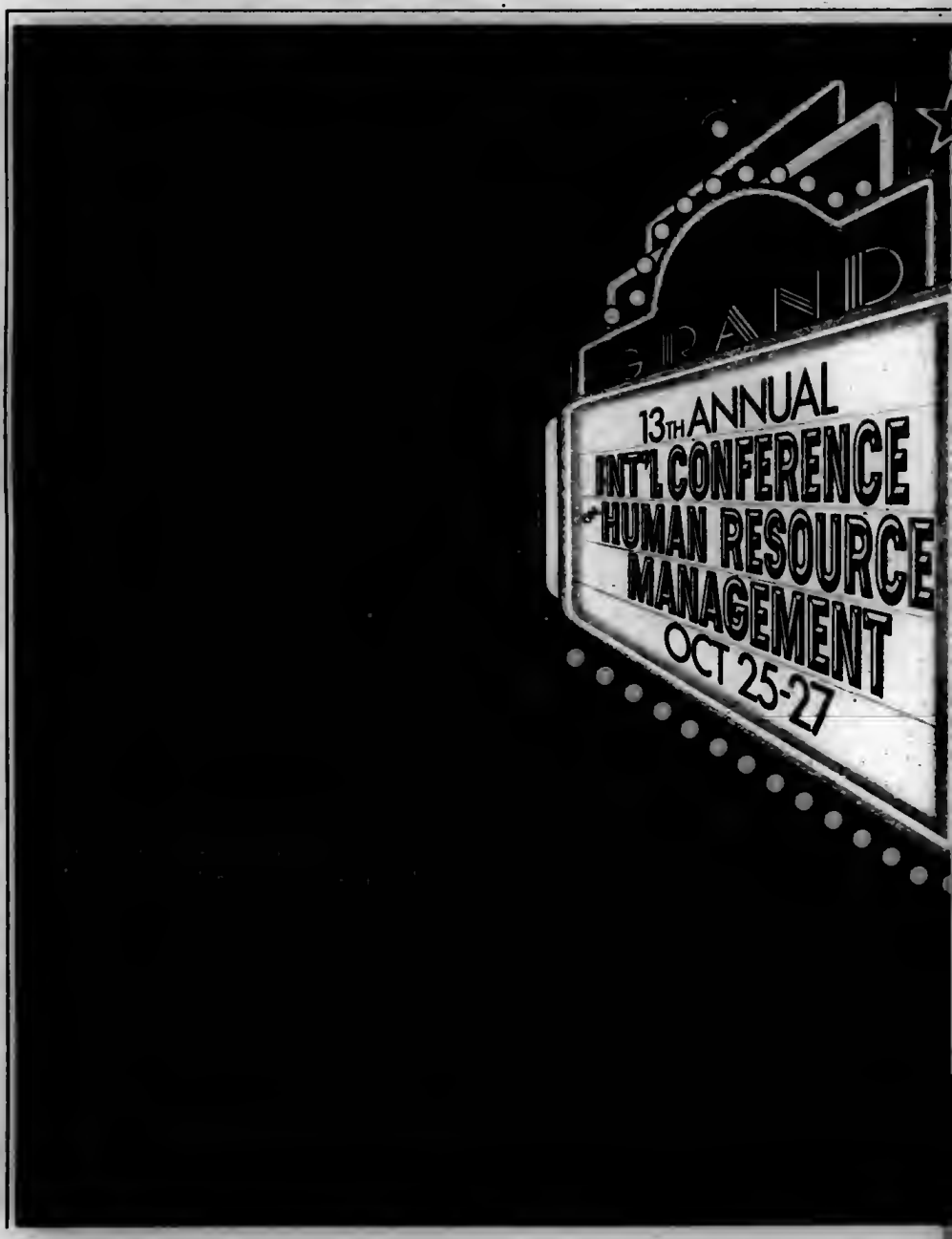
A key problem here is that browsing is not syntactically oriented. How do you enter a browse command? You don't. Browsing is visually oriented.

In general, commercially available report writers and fourth-generation languages require users to identify what it is they want to look at. The manager doesn't know. He wants to browse. He will not sit at a terminal entering one simple request after another in order to browse through data.

The manager needs the visual aspect of data. He needs the ability to zoom into more detailed levels of data. If he identifies a potential problem — for example, an anomaly in a financial graph displayed on his terminal — he needs the ability to zoom through that number and receive a higher level of detail on its components. He needs to do this without having to type in additional commands. Similarly, he needs the ability to pop out of that lower level and continue his scanning.

Do line managers ever really sit at terminals and type ad hoc requests for information? Only rarely. They usually execute stored procedures that were written for them either by an applications programmer or someone who reports to the line manager and has a knack for using the particular tool. (These people are generally referred to as "fair-haired boys.")

Vendors have tried to overcome the learning problem by creating nonprocedural languages, which allow the end user to put down his request in just about any way he wants. The "very powerful end-user facility"



will correctly interpret what he has asked it to do. Sounds great. But don't try it for anything beyond the simplest query.

Some recent research suggests that nonprocedural languages are only marginally better than procedural languages for ease of learning and ease of debugging for simple queries. However, nonprocedural languages were found to be far more difficult to debug if the query was complex.

So what does that tell us? Nonprocedural tools are fine, if what you're doing is extremely easy. However, if you want to do something complex (and managers don't ask simple questions), nonprocedural tools are just not useful because you cannot debug them.

It is indeed a myth that the powerful tools touted by vendors reside in the hands of true end users who actually use them for ad hoc queries. That just is not the case.

We have looked at the manager's need to sift information. We have also noted the difficulty of employing a syntax in order to retrieve that information.

But what about the type of data available to the manager?

Most DP shops are extremely reluctant to give line managers hands-on access to real production data. At the same time, those line managers are clamoring for just that type of access.

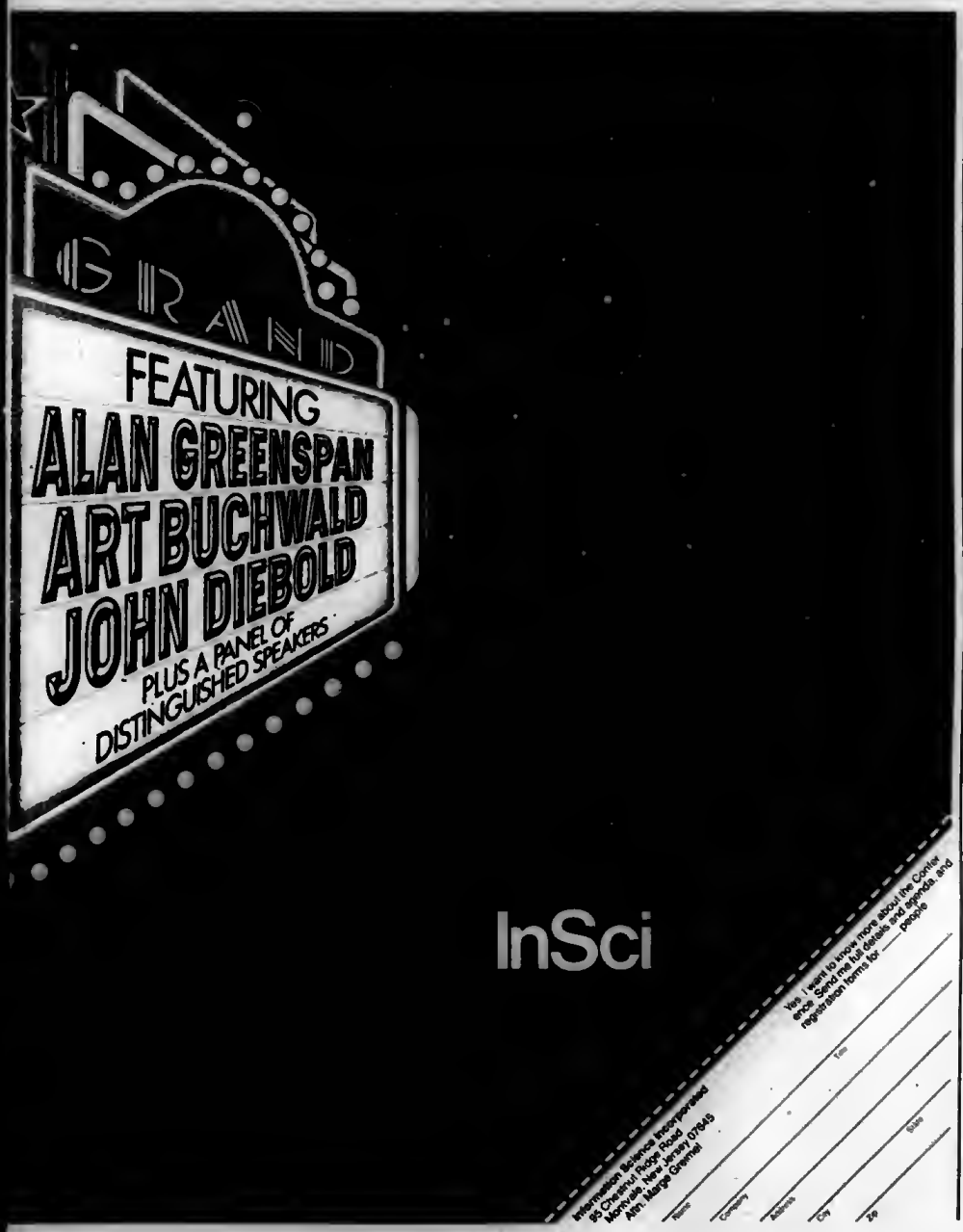
What's the solution? One answer is that end users all run out, buy their own microcomputers and start their own little DP shops.

The IBM solution is to sell more CPUs. This is an excellent marketing strategy and satisfies at least two needs. First, it gets end users off the backs of DP managers; second, it gets end users away from "real data." (Coincidentally, it also provides the vendor with a very nice revenue stream. It sells more 4300s.)

Information Center

Another proposed solution is the information center. The idea is intuitively appealing. It runs something like this: You have at least one large mainframe with all the production data. End users need to be able to use that data for ad hoc analyses. But understandably, you don't want those people to muck around with the mainframe.

There are a variety of persuasive arguments you can use to keep them from mucking. First, it chews up ex-



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tra CPU cycles and that is costly. (Top management always appreciates this argument.) Second, there are some "undefined security issues" involved. (That's all you really need to say.) Third, users just might clobber that data. So let's give them their own machine — an information center.

And what does a user get on that machine? Extracts of production data.

One of the myths of the information center concept is that it significantly reduces the applications programming work load. What really happens is applications programmers now have to write and maintain more programs just to extract data from applications on the mainframe (which they have already written) and load it on the 4300.

The data is then loaded into one or more unrelated tools.

The applications programmer puts some of the information in Focus. He puts some of the information in Stairs. He puts some of the information into APLDI. He puts some of the information into GDDM. He puts some of the information into various models.

The information center is actually a hodge podge of tools. Each has its own small flat file, a subset of data from the main file.

What the line manager gets from the information center is not really information but an array of tools handling extracts of data. The tools are not integrated, the data is not integrated and the data is most likely out of sync with the production data.

The reason we got into the business of information centers was to give line managers access to their data — presumably so they can make better decisions. But the information center does not accomplish this, nor does it provide the granularity of data needed to analyze a problem fully.

For line managers to make decisions and do their jobs, these end-user tools must access integrated corporate data bases. Data should not be extracted and loaded into small unrelated flat files formatted for a single tool. End users must have access to all corporate information resources at the lowest possible level of detail via a single tool or at least an integrated set of tools.

Problem of Typing

Let's face it. There is nothing more appalling than watching a line manager hunt and peck as he attempts to enter login and anter the single statement necessary to execute a stored procedure.

Sympathetic DP departments expand the development resources necessary to provide the managers with menu-based, end-user-specific interfaces using programmable function keys. Of course, these interfaces typically toss the whole notion of browsing and ad hoc query capabilities out the window. But at least a line manager isn't embarrassed to sit down at a terminal. (Management consultants refer to this as a trade-off.)

Now, if we really want to embarrass the line manager, let's make sure we ask him to perform a real ad hoc query. It can be simple and he can

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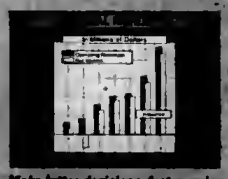

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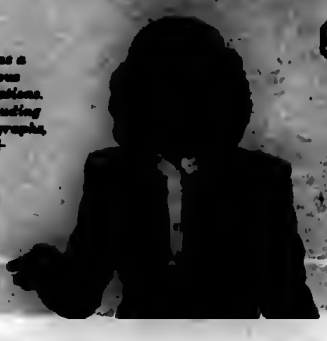

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use the most English-like, nonprocedural, user-friendly, fourth-generation, intelligent piece of software available (aren't all packages described like this?). What is the manager going to do? He will most likely call upon someone on his staff who both understands the system and knows how to type to do the query.

What'a Available?

Several vendors are working to address the line manager's needs. One product that represents a step in the right direction is the Graphic Information System offered by Computer Pictures Corp. The system provides good graphics capabilities and a touch-sensitive retrieval system. As an example, it is very handy for a chief financial officer who needs to see a set of graphical representations of financial performance on a recurring basis.

There are shortcomings. The system is really intended as a stand-alone microcomputer, although it does permit information to be downloaded from a mainframe. Consequently, in many cases, the end user is dealing with subsets of data. In addition, he is no longer dealing with production data. This is the same problem as with the information center.

Another problem is that Computer Pictures provides "finished graphs." In other words, an analyst has to predefine the end user's views of the graphs in order to be able to use the touch-sensitive selection feature. If the graph is not predefined, keyboard interaction is required.

Finally, the system does not really lend itself to browsing. An executive cannot zoom into lower levels of data. It really is only a selection process.

Xerox Corp.'s Star System is another option. It provides some nice browsing capabilities. Unfortunately, it too relies only on the data resident on the local terminal for presentation to the user. In addition, it has a basic capability problem. You cannot put the corporate data on a Star System unless the company is very small.

When you look at the problem of today's line manager, the amount of information coming at him and all the tools he has at his disposal with which to scrutinize the information, you might think of a jet fighter pilot in one of today's very sophisticated fighters.

In order to discover relevant information, the line manager must be able to browse — without relying on a keyboard and without learning a query language. This suggests quite clearly the need for a visually oriented system employing touch screens.

He also needs to be able to browse through real production data bases, not extracts of those data bases which suffer from timeliness problems and may not have the level of detail needed for decision making.

At the same time, he must have access to all the information he needs — financial data, personnel data, inventory data, sales data and so on.

When the line manager has a tool to meet these needs, he will finally be equipped to deal with the volume of information that surrounds him.

About the Author

Larry DeBoever is director, data base products, for Computer Corp. of America in Cambridge, Mass., where he has worked for 2½ years. He has also owned his own consulting firm for three years.

DeBoever previously worked for Arthur Young and Co. He has been in the data processing and/or consulting business for 12 years.

He holds an M.A. in communication from Purdue University and an MPA from the University of Southern California.‡

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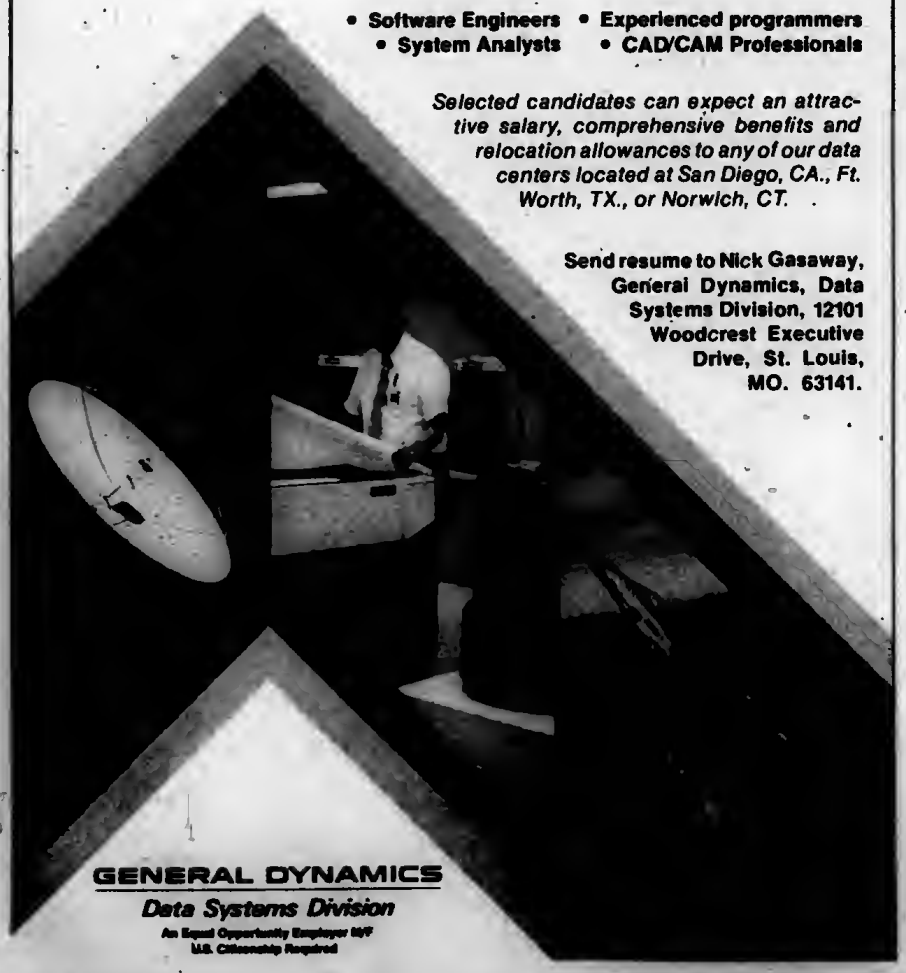

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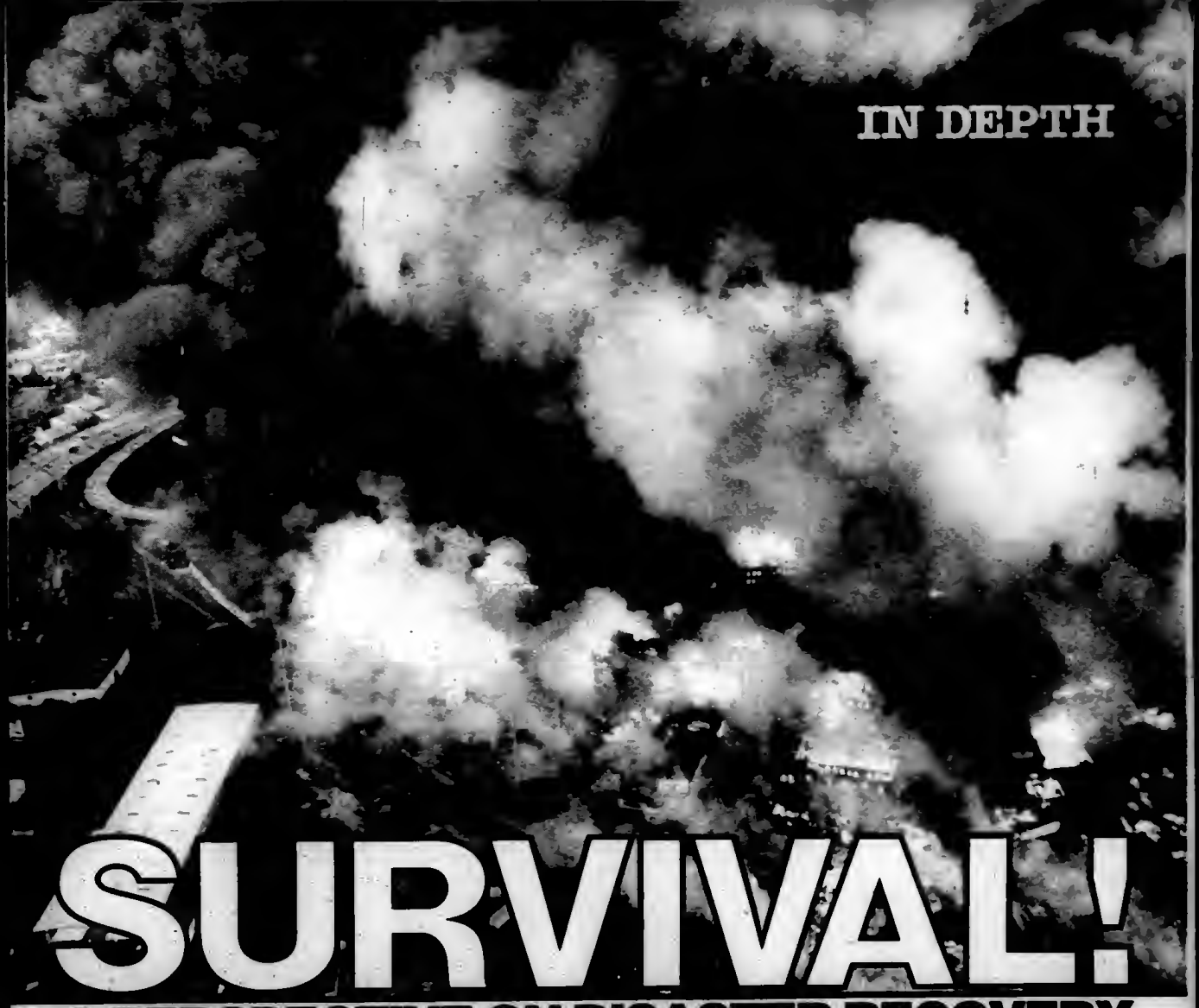

SURVIVAL!

A PERSPECTIVE ON DISASTER RECOVERY

By Larry Cooke Jr.

There is no way to avoid all risk. Mount St. Helens' eruption was a dramatic reminder of human frailty in the face of external phenomena.

What if a group of data processing centers were situated in the foothills of a Mount St. Helens disaster? Entire industries in the region might not recover, even if the physical damage and loss of life were small.

As firms consolidate DP functions and integrate more elements of their business into interdependent computers, business life without those computers becomes unthinkable. Today businesses depend heavily upon data bases, communications lines and specific physical sites, not only to support individual locations, but for whole regions as well. This dependence is increasing at an alarming rate.

An earthquake, industrial sabotage to key communications equipment, rotating brownouts below voltage tolerances, a "Three Mile Island" accident, prolonged drought (which can threaten hydroelectric power) — any one of these would be sufficient to cripple a region's computers.

The American economy is poorly positioned to address the problem of data survival during a regional computer emergency. Short of nuclear war, data survival is clearly not a military problem, and no state or federal agency holds jurisdiction. The notion of regionalization depends on the source of the emergency, which is, of course, unpredictable.

I believe that what cannot be accomplished on a macro level can be achieved on a micro level by each company providing protection for itself. If action is taken, the sum of the thousands of individual decisions will, in their collective effect, obviate the emergency. The sum of individual protective actions — some manual, some interregional and still others multisite — will go far to protect key segments of the economy from the ripple effect of computer dependencies.

An important first step in gaining control of the disaster recovery arrangements is to reassign the responsibility out of the DP manager's realm, back to the business function manager. From the DP manager's perspective, there is a direct conflict between efficient, low-cost processing and adequate recovery in case of emergency. The DP manager may sincerely believe he has a plan in place when in fact it is inade-

Photo by Ellis Herwig

IN DEPTH

quate. This may do untold damage by papering over the organization's inability to handle *any* danger.

The organization must not be mesmerized by large bound volumes weighing several pounds. In many cases, the thicker the plan, the greater the psychic damage to the company. This psychic damage could rapidly become severe physical damage in case of a real emergency.

General Law of Systems

In order to understand how the computer environment functions, it may be helpful to review the General Law of Systems and reapply its principles to the disaster recovery problem.

The law states, "For every system that exists in an environment, the better it is suited to that environment, the less it is able to adapt to a different environment." All systems either regulate, adapt or die. And adaptive responses usually take time.

Early computer systems were highly individualized and could not exist outside of their particular environment. The Eniac often failed and constantly needed repair. Later, mass-production techniques prevailed, and greater generalization became possible. In the mid-'60s, for example, the IBM 1401 computer came in four sizes and with up to six tape drives. If one computer failed, a program could be run on any other 1401 that was as large or larger. Programs ran one at a time, so the environment could be replicated, at will, like a scientific experiment.

Because the production costs of each computer were high, mass-production techniques were applied to the hardware, which resulted in a standard product. Each business had to figure out how to use the standard product to fulfill its business functions. In contrast with today's situation of low-cost and highly diverse equipment, once a company picked a vendor and a machine, there were still hundreds of similar environments where programs could run if the need arose — and it arose infrequently. Dependence on the computer was sufficiently low that the business function could usually wait until the local equipment was fixed.

1 HOW CURRENT IS YOUR DISASTER RECOVERY PLAN?

- A ☐ NON-EXISTENT
- B ☐ OUT-OF-DATE
- C ☐ PARTIALLY OUTDATED
- D ☐ BEING UPDATED
- E ☐ UP-TO-DATE

2 HOW ACTIVE IS YOUR DISASTER RECOVERY PLANNING AT THIS TIME?

- A ☐ INACTIVE
- B ☐ ACTIVE IN THE PAST, BUT CURRENTLY STAGNANT
- C ☐ LOW-PRIORITY, NOW-AND-THEN ACTIVITY
- D ☐ "HIGH-PRIORITY" BUT PART-TIME ACTIVITY
- E ☐ FULL-TIME ASSIGNMENT FOR ONE OR MORE PEOPLE

3 WHAT IS THE CURRENT STATUS OF YOUR DISASTER RECOVERY PLAN?

- A ☐ NO DOCUMENTED PLAN EXISTS
- B ☐ FRAGMENTARY "PLANS" ADDRESS PARTS OF THE PROBLEM
- C ☐ THERE IS AN UNPROVEN "PAPER" PLAN
- D ☐ THERE IS A COMPLETE PLAN, PARTS OF WHICH HAVE BEEN TESTED
- E ☐ THE PLAN IS THOROUGHLY TESTED AND IS ROUTINELY MAINTAINED

4 WHO IS RESPONSIBLE FOR YOUR DISASTER RECOVERY PLANNING?

- A ☐ NO ONE HAS BEEN DESIGNATED
- B ☐ OUTSIDE CONSULTANT
- C ☐ DATA PROCESSING OPERATIONS MANAGER
- D ☐ DATA SECURITY ADMINISTRATOR
- E ☐ INFORMATION SYSTEMS DIRECTOR
- F ☐ CORPORATE SECURITY OFFICER
- G ☐ _____

5 WHO IS THE HIGHEST-RANKING PERSON INVOLVED IN YOUR PLANNING?

- A ☐ DATA PROCESSING AUDITOR
- B ☐ DATA PROCESSING OPERATIONS MANAGER
- C ☐ CORPORATE SECURITY OFFICER
- D ☐ INFORMATION SYSTEMS DIRECTOR
- E ☐ GENERAL MANAGER
- F ☐ EXEC EXECUTIVE OFFICER
- G ☐ _____

6 WHICH ASPECTS HAVE YOU ALREADY DONE SOMETHING ABOUT?

- A ☐ EMERGENCY PROCEDURES
- B ☐ DP TEMPORARY PROCESSING ARRANGEMENTS
- C ☐ OFF-SITE VITAL RECORDS STORAGE
- D ☐ CRITICAL JOB PROCEDURES
- E ☐ USER ALTERNATE PROCEDURES

7 WHICH EMERGENCY-PROCEDURES HAVE YOU REHEARSED?

- A ☐ EVACUATING THE COMPUTER CENTER
- B ☐ ASSEMBLING THE RECOVERY MANAGEMENT TEAM
- C ☐ GATHERING DISASTER INFORMATION AND ASSESSING "DAMAGE"
- D ☐ DETERMINING WHICH APPLICATIONS ARE CRITICAL AT THIS TIME
- E ☐ MOBILIZING DISASTER RECOVERY TEAMS

8 WHAT ARRANGEMENTS HAVE BEEN MADE FOR DP TEMPORARY PROCESSING?

- A ☐ USERS WILL CONDUCT BUSINESS WITHOUT DP'S SERVICES
- B ☐ WILL BUY COMPUTER TIME AT A SERVICE BUREAU
- C ☐ "RECIPROCAL AGREEMENT" WITH ANOTHER FIRM
- D ☐ RAISED-FLOOR SPACE AVAILABLE, IF NEEDED
- E ☐ MEMBERS OF A "CONDITIONED SHELL" GROUP
- F ☐ CONTRACT WITH A "STANDBY SYSTEM" SERVICE
- G ☐ ANOTHER INTERNAL COMPUTER CENTER AVAILABLE FOR BACK-UP
- H ☐ _____

9 IN GENERAL, HOW DO YOUR USERS FEEL ABOUT DISASTER RECOVERY?

- A ☐ UNAWARE OF THE DISASTER RECOVERY PROBLEM
- B ☐ FEEL DISASTER RECOVERY IS DP'S PROBLEM, NOT THEIRS
- C ☐ EXPECT TO BE CONSULTED ABOUT THE DISASTER RECOVERY PLAN
- D ☐ ACCEPT RESPONSIBILITY FOR THEIR INFORMATION SYSTEMS

10 HOW ARE YOUR USERS INVOLVED WITH THE INTERIM PROCESSING PLAN?

- A ☐ NOT INVOLVED, OR NO PLANNING
- B ☐ [illegible] TO DISASTER RECOVERY PLANNING SURVEY
- C ☐ ASSIST IN VALIDATING DP TEST RESULTS
- D ☐ JOINTLY CONDUCT TESTS WITH DP
- E ☐ DEVELOP THEIR OWN ALTERNATE PROCEDURES

(Courtesy of IBM System Science Institute)

Figure 1

However, as basic computer equipment costs fell, other factors dominated. Users became smarter, marketing techniques improved, specialized equipment became more cost-effective and on-line dependency grew to a level unimagined a decade earlier.

On-line applications spelled an end to the ability to reproduce environments exactly. Random events became the norm. The specialized equipment means fewer and fewer alternate locations where the business function can reside. In addition, teleprocessing creates a physical dependence on telephone lines and other facilities that are expensive, controlled by outside forces and slow to alter.

Data base technology adds a new degree of specialization. Large on-line data bases consisting of billions of characters are increasingly needed to complete routine business functions.

The combination of the three elements — on-line computer systems, large data bases and teleprocessing — could easily create an environmental dependency such that a specific business function might exist nowhere else on earth. In order to avoid the extinction implied by the failure of the environment, companies must consciously test the viability of their operations in other situations.

Impetus for Planning

As we noted earlier, the impetus for adequate disaster recovery planning is not likely to come from data processing. DP is somewhat hampered by its view of work: It must run what it is fed. Without some prespecified, possibly draconian, choices on the part of the business manager, DP is unable to discriminate the essential work from its normal work load. "Nice-to-have" work is often interspersed with vital business information. Identifying the vital records of the firm, along with implementing a plan for regular readiness testing, requires user management input along with senior management direction.

The checklist of Figure 1 may be used to determine your firm's current readiness to survive a computer disaster. Much of the essential planning involves computer processing only indirectly. People, supplies, space and documentation also figure prominently.

Recent studies indicate that a high percentage of companies are considering disaster planning. They should be aware that the plan alone, without testing, may be valueless.

Further danger lurks in the assumption, based on past history, that the

11 HOW DO YOU TEST YOUR OF TEMPORARY PROCESSING PLAN?

- A ☐ DOCUMENTATION REVIEWS
- B ☐ PROCEDURE "WALK-THROUGHS"
- C ☐ IN-HOUSE TESTS OF "CRITICAL APPLICATION" PROCEDURES
- D ☐ IN-HOUSE TESTS USING BACK-UP DATA FROM OFF-SITE STORAGE
- E ☐ "FUNCTIONAL" TESTS CONDUCTED OFF-SITE
- F ☐ OFF-SITE "PRODUCTION" TESTS USING BACK-UP PROGRAMS AND DATA

12 HOW OFTEN DO YOU TEST YOUR DISASTER RECOVERY PROCEDURES?

	NEVER	ONLY ONCE	ONCE A YEAR	MORE THAN ONCE A YEAR	
	A ☐	B ☐	C ☐	D ☐	EMERGENCY PROCEDURES
	E ☐	F ☐	G ☐	H ☐	DP TEMPORARY PROCESSING ARRANGEMENTS
	I ☐	J ☐	K ☐	L ☐	OFF-SITE VITAL RECORDS STORAGE
	M ☐	N ☐	O ☐	P ☐	CRITICAL JOB PROCEDURES
	Q ☐	R ☐	S ☐	T ☐	USER ALTERNATE PROCEDURES

13 RANK THE FOLLOWING DP COMPONENT RESOURCES IN THE ORDER OF DIFFICULTY TO RECOVER OR REPLACE.

- ☐ COMMUNICATIONS - LINES, MODEMS, CONTROLLERS, ETC.
- ☐ DATA - APPLICATION DATA, PROGRAMS, DOCUMENTATION, ETC.
- ☐ EQUIPMENT - COMPUTER SYSTEM, SUPPORTING EQUIPMENT, ETC.
- ☐ PEOPLE - DP OPERATIONS, SUPPORT, SYS AND APPL. PGMRS, ETC.
- ☐ PHYSICAL PLANT - CONDITIONED FLOOR SPACE, PEOPLE SPACE, ETC.
- ☐ SUPPLIES - PAPER, FORMS, ETC.

Figure 1 (continued)

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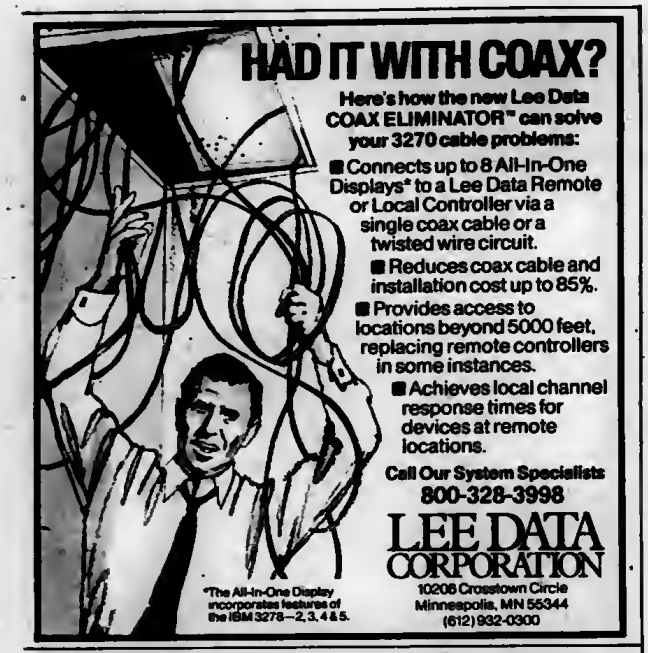
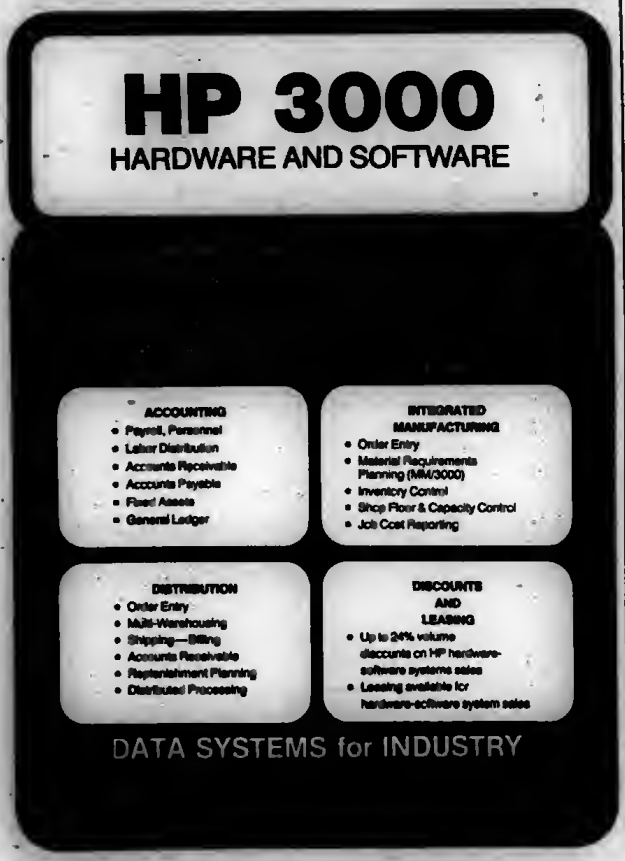
IN DEPTH





average firm may expect to see computer disaster only once in a thousand years. However, for most of the history of data processing, there were fewer computers and much less computer dependency. And with more than 50,000 computer installations, 50 emergencies each year are possible.

Even recognizing immediately that a disaster has occurred is no small task. Early assessment may be a key to early recovery. Good evacuation procedures are essential, not only to protect life and limit damage, but also to make sure that trained people will be around to implement the plan.

The way in which the organization views normal processing determines, to a large extent, the difficulty in maintaining backup. Routine division into vital and discretionary processing will greatly decrease the cost and improve the ease of recovery. Elements that can be provided manually can be eliminated from the backup plan, even though they should still be tested periodically.

Certain computerized processes can be provided by hand-held calculators or by inactive storage at a time-sharing service, with minimal cost and minor effort once the initial procedure is set up. Certain other more complicated functions can be dropped from regular testing if they can be found in duplicate supply. A periodic check of continued availability should suffice.

The core of the essential processing can still yield to cost saving if planned beforehand. In an unplanned environment, the initial reaction is to attempt to back up everything.

Figure 2 contrasts a hypothetical example, not atypical, where peak processing is twice average processing. If full backup is required, a minimum disaster recovery profile must

(Continued on In Depth/14)

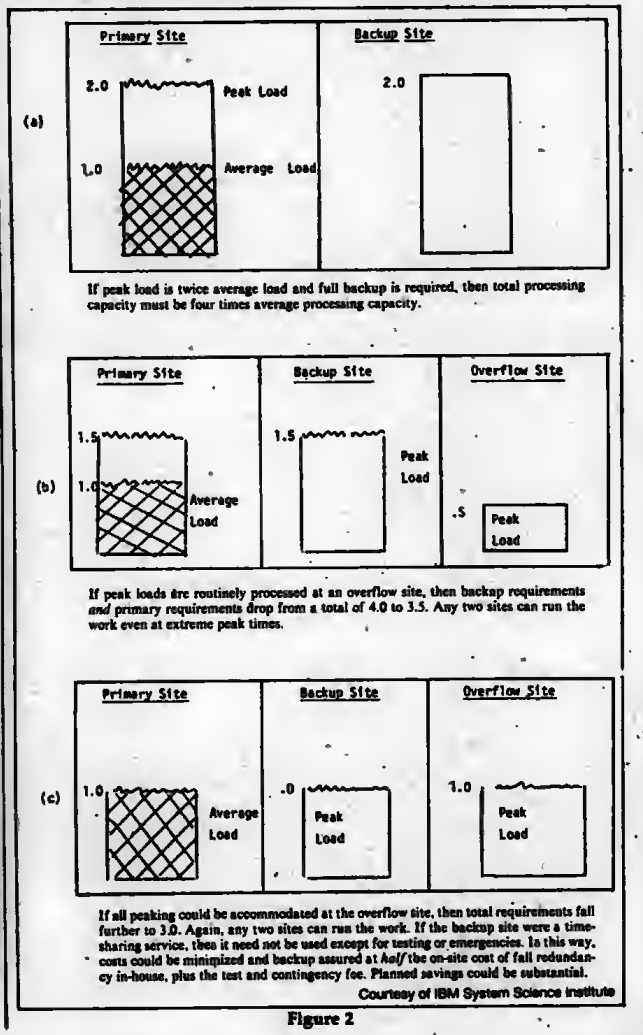


Figure 2

Just How Bad Might It Be?

Let's trace a hypothetical disaster in the St. Louis area.

If computer operations came to a standstill in banks alone, 10 million checks would be affected daily. By the end of the week, checks could no longer be accepted as legal tender, since it would not be possible to determine whether funds were good. For individuals, payrolls could revert to cash.

Credit purchases could probably be accepted beyond the first week, until merchants realized that receivables could not be processed because of the computer failure.

Businesses that depend on knowledge of funds movement for investments would be uninformed of the current status of their asset positions, since that information is stored in computer files at banks.

In quick succession, accounts receivable, commercial loans, purchasing, pricing and finally inventory operations of more and more businesses would shut down because banks would be unable to process legal tender and provide accounting for 90% of the region's money supply.

Short-term conversion to a cash economy could induce further civil disturbances, as jerry-rigged payment stations might become hold-up targets because of inadequate physical protection of the money.

Federal Reserve Emergency

After a week, a Federal Reserve emergency would undoubtedly occur, involving a payment holiday of some form, while the checks themselves would be airlifted to some region of the country that could provide check-sorting equipment and computer power.

Within a week, regions not directly affected would experience inconveniences in the payments flow. Checks passed into and outside of the damaged St. Louis region, either from St. Louis businesses or drawn on St. Louis banks, would cease to flow. Federal Reserve float would balloon, since St. Louis checks could not be cleared quickly.

The fall-off in payments nationwide from a regional failure entering its second week might introduce enough economic slack elsewhere to permit the St. Louis checks to be sorted and processed elsewhere, say in Philadelphia.

Staggering Job

Unfortunately, at the time of the regional failure, none of the affected banks' computer programs would be in Philadelphia. Even if the severity of the disaster were known at the moment of failure, the mobilization process would be of staggering proportions.

On short notice, the task would be insuperable: locating alternate sites, moving computer programs and personnel, resolving physical and logical computer differences, debugging and executing these programs and reconciling differences with the data and reports which may or may not yet be physically available in Philadelphia, for each business processed by each bank.

Since industrial, agricultural, transportation, retail and other corporations depend on banks for financial information, these firms would feel the disaster's effects more and more. Their records, on electronic files, might be in St. Louis, Philadelphia or still in a box waiting to be processed.

Beyond a second week of outage, the backlog of work to be processed and the cascading number of errors might take months or years to reconcile.

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IN DEPTH

(Continued from In Depth/12)

provide at least four times the average capacity. This is shown in Figure 2a. If, on the other hand, peaks can be routinely processed at another site entirely (2b), total requirements may be reduced and backup possibilities increased. Finally, the overflow capacity could be further increased (2c) so that the total data processing requirement, in user hardware, could be cut in half.

Some ongoing testing, routine exercise of the overflow site and some increased logistics costs offset the hardware savings. In any event, the dollar savings should be substantial. If the overflow site is a time-sharing service, usage could be maintained at a minimal level to keep up a testing proficiency needed for contingency only. Peak processing could be done at the backup site routinely except during an emergency. The only function of the third plant is to prove continuing viability.

It is commonly believed that a backup site must be identical to the primary site. However, the two sites need not be the same if portability is designed into each application. Elements of portability can be provided by the use of higher level languages which run on different vendors' machines. While portable programs are not as efficient as those written for the specific environment, they obey the generalized system laws and ease expansion, migration to new computers and, of course, disaster recovery.

It is not possible to state a general rule for how far to take disaster recovery planning. Like a sprinkler system for fire, disaster recovery planning is a form of insurance. The premiums should be commensurate with the risk.

Most companies experience outages of 24 hours or more that usually cause only inconvenience. But depending on the type of firm, inconvenience grows to catastrophe over some time frame. For banks, a week is probably maximum. Insurance companies may recover from an outage of up to 10 days. On-line functions like airlines and reservations can only exist a few hours; consequently, they have already gone to redundant systems. But each firm should know where inconvenience becomes chaos.

No plan can be instituted overnight. Lead time is an essential ingredient. Each area to be tested, at least for the first few applications, must be tested twice. The first is a dress rehearsal, and the second simulates a real emergency with the factor of surprise. Figure 3 shows some typical team activities.

Only testing can show up obvious but fatal flaws. For example, one test found that a key player was on vacation somewhere in the Caribbean during the "emergency." He had the only combination to a vault needed for recovery. In another case, all the data tapes for recovery were off-site, but the list identifying the contents of several hundred tapes was still back at the "destroyed" center. To proceed with the test would have required placement of each of the tapes at random until the system recognized the correct one.

Only testing provides learning by doing. The plan need not be perfect the first few iterations. Information learned from the first few attempts rapidly accrues to later applications. Disaster recovery unit costs drop quickly with experience. A convenient way to provide adequate testing readiness is to hold a "disaster of the month" for applications selected at random.

Finally, the very activity of reviewing data processing work for its criticality to the organization is itself a healthy process. We have passed the corner where computers are expendable in business organizations. Looking at them as machines that can and will fail but can be temporarily replaced by planned processes will give us the "stiff upper lip" to persevere through all but the most fatal catastrophe.

About the Author

Larry Cooke Jr. is senior vice-president of BayBanks Data Services, Inc. in Waltham, Mass. Prior to assuming this position, he was chief of information sciences at the Federal Reserve Bank of New York, before which he was a compiler developer with IBM. He joined IBM in 1963.

Cooke writes frequently on computer productivity issues. This is his second In Depth article, the first having appeared Sept. 8, 1980.

Cooke holds a B.A. in political science from Boston University and an MBA in economics from New York University.

Documenting the Plan

Teams and Responsibilities:

A. Temporary Processing Center Team
- Prepare facility to receive equipment - electrical, A/C, phones...
- Set up security procedures at recovery site
- Supervise installation of hardware, lines, phones, furniture...
- Set up floor plan, work flow
- Coordinate testing of hardware, software
- Run recovery jobs
- Arrange for any assistance needed at the TPC

B. New Hardware Team
- Obtain equipment list from off-site storage
- Order replacements for damaged, inoperative equipment
- Coordinate, expedite deliveries
- Advise other teams on schedules
- Coordinate with purchasing, legal, vendors on new contracts

C. Software Team
- Establish operating system requirements for files, libraries, utilities...
- Load and test operating and other systems and files
- Provide Communications Team with on-going status
- Coordinate with Hardware Team for software which is hardware dependent

D. Communications Team
- Establish voice and data communications
- Coordinate lines, terminals, modems, front-end
- Test on-line and dial-up communications

E. Applications Team
- Establish cut-off dates for files
- Contact, coordinate with key users
- Provide technical support on applications
- Supervise back-up, restoration procedures
- Load application data sets

F. Off-Site Storage Team
- Notify off-site storage facility
- Set up off-site inventory control and security procedures
- Distribute inventory items to teams
- Establish and implement procedures to back up recovery site

G. Management-Administrative-Logistics Team
- Establish command post with large number of phones
- Provide transportation for people, equipment, supplies
- Communicate phone numbers, location of command post
- Provide road maps
- Arrange lodging, furniture, medical services...
- Provide for call-back of recovery personnel
- Ensure that necessary actions are being taken
- Hire temporary personnel
- Arrange for expenses, payment of invoices
- Handle any other contingency

H. Salvage Team
- Establish security at the damaged facility
- Contact, coordinate with insurance companies, fire, police
- Determine if area is safe for personnel
- Salvage any usable equipment, supplies

(Courtesy of IBM System Science Institute)

Figure 3

Info Savvy

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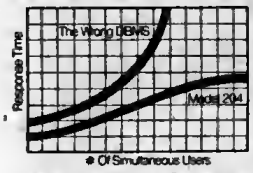

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The next issue of *Computerworld OA* will focus on selling office automation within an organization. This special report will feature the human angle of office automation and highlight the strategies of selling the concept of OA to top management and end-users in an organization. You'll see articles on implementation techniques, feasability studies, human interface, ergonomics and productivity.

And, of course, you'll see several articles on current happenings in all aspects of OA.

There will be bonus distribution of this issue to attendees of the Info '82 Show in New York this October. So, if you're a supplier of OA products and services, you won't want to miss the opportunity to advertise in *Computerworld OA's* next issue.

The issue date is September 29th. The deadline date to remember is August 20th for space reservations. (Materials are due August 27th.)

For more details on *Computerworld OA* and the people who read it, just contact your local *Computerworld* representative, or call Bob Ziegel, Vice President at (617) 879-0700 for all the information.

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DEC Guarantees Uptime Up to 99%

MAYNARD, Mass. — Digital Equipment Corp. is offering a total system uptime guarantee for its Decsystem-10 and 20 computers and VAX-11 superminicomputers said to ensure an uptime of 96% to 99%.

The guarantee, which is available free of charge to DEC customers in the U.S. that meet certain eligibility requirements, covers both vendor-supplied hardware and operating system software. Basically, the guarantee protects a user against system downtime, defined as the period within the hours of the user's service contract coverage when the system is turned over to DEC for corrective maintenance because of a system malfunction, according to a spokesman.

DEC guarantees that the user's system will be operational not less than 96% of the time during a 13-week contract period, he added. Also, if the user's downtime exceeds that limit, DEC will either increase the system's preventive maintenance, raise corporate support levels, replace or rebuild the defective equipment or recommend changes to the user's computer environment.

Additional information on the guarantee is available from DEC, Maynard, Mass. 01754.

Microcontroller Out for VAX/VMS

IRVINE, Calif. — Able Computer, Inc. has announced a 16-line communications microcontroller with modem control and programmable direct memory access (DMA) for Digital Equipment Corp.'s VAX-11 superminicomputers.

The Able VMZ/32 is said to fill the requirements sought by DEC VAX/VMS users for the past year and a half. The unit contains two eight-line multiplexers programmed to emulate the asynchronous functions of two DEC DMF32 controllers.

The VMZ/32 reportedly gives VAX-11/730, VAX-11/750 and VAX-11/780 users the ability to optimize the DMA capability of asynchronous communications on VMS software. The unit costs $4,250, while upgrade kits for Able VX/DZ users cost $750 from the firm at 1732 Reynolds Ave., Irvine, Calif. 92714.

More to Computer Room Than Initial Appearance

DELRAN, N.J. — At first glance, the average computer room may seem to consist of nothing more than raised flooring, air conditioning and a fire protection system. In fact, this is the perception that most DP managers, programmers and operators may have of the typical climate-controlled computer environment.

However, to the computer room planner or designer, the computer room is a complex world of balanced lighting and acoustics, sophisticated air filtration systems and more than sufficient power supplies. In many cases, this room can cost as much as $2,000 to $4,000 per square foot, often surpassing the initial cost of hardware.

Therefore, it is important for a user to build a room that is not only functional, but provides more than adequate protection for the computer systems and the room's highly sensitive detection systems.

In a recent report on computer room environments, Datapro Research Corp. details not only what should go into the average computer room, but what points are critical to the basic function of protecting a user's system. The report is aimed at persons building a new computer center, expanding or redesigning an existing center, buying a new computer or experiencing problems such as electrical difficulties or security.

Report Considerations

One of the first considerations that should be given a new center is its location, the report stated. Before driving the first nail, users should make sure that the site offers sufficient space, adequate power and lighting, a sufficient water supply for system cooling and adequate access routes.

Most computer rooms are constructed using floors that are raised on heavy-duty springs or shock absorbers. This not only limits vibrations that could be passed along to the computer system, but affords space under the flooring for cables and wires. However, the flooring should be carefully selected. For instance, the flooring should not generate static electricity, the nemesis of all DP systems. Floors should also be grounded, have no protruding metal parts and be treated to minimize dust buildup, the report said.

Fire protection systems, perhaps the most important part of a computer room since they could avert the destruction of the entire system, should include sensors located both above and below the raised flooring. Sensors and alarms should be installed in rooms adjacent to the center, such as in the tape library or communications room. The most popular fire protection system was based on Halon 1301 as an extinguishing agent. However, this should be backed up by both water and CO^2 systems easily accessible throughout the center.

Finally, a center's security system should include an access control system that covers the center and tape and disk libraries. Other security precautions include off-site storage facilities to back up the system, peripherals or software; a document destruction system; and frequent internal security audits, Datapro said.

The report, "All About Computer Room Environment," costs $19 and is available from Datapro, 1805 Underwood Blvd., Delran, N.J. 08075.

Graphics Added To Televideo Units

SACRAMENTO, Calif. — Digital Engineering, Inc. has announced a line of upgrade products that reportedly converts Televideo, Inc. Models 910, 912, 920, 925 and 950 terminals into full-featured, bitmap graphics terminals.

GEN.II Retro-Graphics is said to provide users with a 640 by 240 resolution display. Using the terminal's local intelligence, the enhancement allows rapid graphics generation without time-consuming data transfer between the host computer and the terminal, a vendor spokesman said.

Graphics command features include arc, circle and vector drawing and point plotting, which can be performed with English-like command strings. The operator also has the option of drawing combinations of solid, dotted and dashed lines on a mode-independent basis, a vendor spokesman said.

The enhancement is available for $1,095 from Digital Engineering, Inc., 630 Bercut Drive, Sacramento, Calif. 95814.

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DEC	RLO2K-DC	165.00	DEC Compatible	4473-2 (RMO5-P)	1,250.00
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Bits & Pieces

Power-Switching System Works on DEC VAX-11s

SANTA ANA, Calif. — Marway Products, Inc. has announced a power-switching unit for Digital Equipment Corp. VAX-11 processors.

The MPS 7100 features a 6-bit status display, power fail/restart logic, an 80 msec holdup time, a two-pole magnetic circuit breaker and emergency overtemperature shutdown output, the vendor said.

The cost of the switcher begins at $2,250. Marway is at 2421 S. Birch St., Santa Ana, Calif. 92707.

Voice Output Digitizer Fits Schematic Package

LAGUNA NIGUEL, Calif. — Design Aids, Inc. has announced a voice-output digitizer for the firm's Drafting System 1 electronic schematics package.

The digitizer is used as a data capture station where the operator can digitize nongrid, free-hand schematics that are stored on a floppy disk on an attached IBM Personal Computer. The attached vocal output unit gives the operator, via headphones, positive feedback as to the data that is entered, the vendor said.

The digitizer costs $18,990, the vendor said from 27822 El Lazo Road, Laguna Niguel, Calif. 92677.

Printer Replacement Unit Designed for IBM 3203-5

FORT LAUDERDALE, Fla. — An IBM 3203-5 Printer Replacement System has been announced by Southern Systems, Inc.

The printer is said to be compatible with all IBM and non-IBM mainframes that support the 3203 Model 5 printer. Priced at less than $20,000 for 1,130 line/min, the unit reportedly costs 50% less than IBM's printer.

Using Southern Systems' QT series printers and its 32/5 controller, the 3203-5 reportedly can run up to four printers simultaneously. The vendor is located at 2841 Cypress Creek Road, Fort Lauderdale, Fla. 33309.

Intelligent Printer/Plotter Has Eight-Needle Matrix

FALLS CHURCH, Va. — Text Editing Equipment Corp. has announced the X80 SP, an intelligent printer/plotter that features an eight-needle matrix.

Features include four character sizes, text printing in eight directions, image output and intelligent plotting of any lines, right angles, circles and ellipses, the vendor said.

The unit comes with a standard RS-232C interface or the IEE 488 parallel interface, the vendor said.

The X80 SP costs $2,700, the vendor said from Suite 202, 400 N. Washington St., P.O. Box 6110, Falls Church, Va. 22046.

'Huh! It Doesn't Even Go Up to a Zillion Squillion.'

ANNOUNCING: IN-DEPTH SEMINARS IN ADVANCED COMMUNICATIONS
September 15, 1982, Boston

Dr. Dixon R. Doll

John W. King

James A. Doherty

Thomas Hannagan

Dr. Michael Hammer

A full day of professional instruction by industry leaders will be held on September 15, 1982, as part of The OA Forum at the Marriott Long Wharf Hotel, Boston.

The four concurrent seminars will include:

Teleconferencing: Low-Cost Systems for High-Payoff Applications
Dr. Dixon R. Doll, President of The DMW Group
John W. King, Vice-President of The DMW Group

Dr. Doll and Mr. King will take a pragmatic view of the equipment and services available for TC, including freeze-frame video and datacom-based compression techniques. Material will be drawn from a recently completed TC study for a large multilocation user, and demonstrations will allow hands-on experience with leading vendor equipment, and a field trip to a user site.

Dr. Doll is a recognized expert in design, planning and implementation of advanced communication systems and computer networks. Mr. King is responsible for DMW activities in the Western U.S. and coordinates strategic planning projects for clients in the U.S. and Europe.

Strategy and Planning for Selection of Computer Branch Exchange Systems
James A. Doherty, Senior Vice President, Voice Communications, The DMW Group, and **Dr. Doll.**

This session will cover: **Developing the Request For Proposal (RFP), Local Area Networks Interfaces/Gateways, and Implementation and Cutover Planning Considerations.** Mr. Doherty will detail new methodology required to design cost-effective systems. Those presently utilizing individual switch configurations, tandem networks, and users considering staying with the Bell system or moving to independent vendors, will find the material current and comprehensive.

Mr. Doherty's background of over 30 years in telecommunications includes key roles with Pan Am and Collins Radio, as well as with Equitable Life where he was responsible for the selection and implementation of the largest private interconnect system installed to date — the Danray CMX 8000.

Selecting and Implementing Electronic Mail Systems
Thomas A. Hannagan, President of Hannagan & Associates

The session will define the basic elements of an electronic mail system and discuss the advantages and disadvantages of various products. Key topics include: evaluating and choosing a system; selling and justifying it to management; planning a pilot project; and implementing a full-scale system.

Mr. Hannagan, as Vice President and Manager of Office Automation for Continental Bank, Chicago, directed the planning and implementing of executive support systems including electronic mail, word processing, voice messaging and executive information access tools used to create paperless offices in an integrated fashion for over 1,500 executives.

Formulating An Office Automation Strategy and Plan
Dr. Michael Hammer, Founder of Hammer & Co. and Associate Professor at MIT

Dr. Hammer will examine the need for an organized approach to office automation planning. Topics will include: objectives, strategy and planning; pilot projects; analysis, design and illustration; strategic alternatives and impact; workshop and discussion of attendee problems and interests.

An advisor to major firms on strategic implications of OA including the development of office systems products and marketing strategies, Dr. Hammer also leads a major research program at MIT and is now engaged in the design of a multifunctional office workstation.

The OA Forum, September 13-15, 1982, is a comprehensive three-day program designed to examine new concepts and technologies crucial to the automated, integrated office. It will address three major topic areas with specific interest to the Data Processing/MIS professional.

Day 1 — Personal Computer Day. Are PCs the answer to office automation and distributed processing?
Day 2 — DP's Role in Office Automation. How can DP expedite office automation in human terms and with bigger corporate payoff?
Day 3 — In-Depth Seminars in Advanced Communications and Office Automation

Attend the day of your choice, any two, or all three days.

Registration for the full-day, In-Depth seminar alone is $295. (A reduced rate is available to those attending other days of The OA Forum.) Sessions include notes, lunch, coffee breaks and reception for interfacing with instructors. Full course outline is available on request. Costs for Personal Computer Day (Sept. 13) $145; DP's Role in Office Automation (Sept. 14) $245. A special three-day combo registration is only $595 which includes lunch daily.

To register, or for more information, call Louise Myerow, Registration Manager, **toll free 1-800-225-4698** (in Mass. call collect 617-879-0700).

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	Software Reliability	Software Price	Service Maintenance Quality	Service Support Quality	CPU Reliability	CPU Price	Peripheral Reliability	Peripheral Price
Most Highly Rated	Microdata Basic Four DEC IBM	Microdata Tandem Texas Instruments	IBM Basic Four Microdata	IBM Basic Four Microdata Four-Phase	Tandem IBM DEC	Texas Instruments Wang Prime Basic Four	IBM Basic Four DEC Hewlett-Packard	Wang Basic Four Microdata Texas Instruments
Highly Rated	Wang Hewlett-Packard Tandem Four-Phase Prime Data General	Qantel Wang General Automation SEL Datapoint	DEC Hewlett-Packard Four-Phase SEL Qantel	Hewlett-Packard DEC Prime SEL Tandem	Microdata Hewlett-Packard Basic Four Four-Phase Prime Perkin-Elmer	Microdata Four-Phase DEC Datapoint Data General	Microdata Qantel Prime NCR Texas Instruments	Four-Phase Qantel Prime DEC Data General
Favorably Rated	Sperry Univac Burroughs NCR Texas Instruments Honeywell Datapoint Qantel General Automation	Basic Four Prime Data General DEC Hewlett-Packard Four-Phase Burroughs NCR IBM Perkin-Elmer Sperry Univac	NCR Sperry Univac Data General Tandem Honeywell Wang Burroughs Prime Texas Instruments Perkin-Elmer	Honeywell Sperry Univac Qantel Wang Data General Burroughs Texas Instruments NCR	Texas Instruments Wang Data General Qantel General Automation Datapoint NCR Sperry Univac Honeywell	Perkin-Elmer Hewlett-Packard Burroughs General Automation Qantel NCR SEL Honeywell IBM	Modcomp Data General General Automation Perkin-Elmer Wang Honeywell Sperry Univac Burroughs	SEL Tandem Datapoint Perkin-Elmer Hewlett-Packard Burroughs NCR IBM Modcomp

IDC Chart

Evaluations of System Suppliers

Users Influenced By Ads, Opinions

Performance Not Key Buying Point: IDC

By Tim Scannell
CW Staff

Ratings of hardware, software and computer services usually focus on how much a user likes or dislikes a system after the contract has been signed and the system has been delivered. But which systems stand out in a user's mind before the sale? And what makes a user choose one vendor over another in the final analysis?

These are some questions International Data Corp. (IDC) asked in a survey of small system users that attempted to zero in on why some vendors outshine others in the proposal stage. While the recently released report on the survey's results didn't offer any conclusions, it did say that cosmetics, heresay and the age of a firm play a heavy role in capturing the user's eye and pocketbook.

Respondents in the survey, which appeared in IDC's *Maintenance Technology Trends/System Products* report, were asked to rate the vendors that were considered when choosing their systems. The ratings were reported on a scale of 0 (poor) to 5 (excellent). Since system performance and actual machine experiences were not a factor at this time, these ratings were influenced by such outside influences as vendor advertising, other user comments and opinions and personal relationships with people associated with the vendor, the report said.

When the results and ratings of the survey were tabulated, IDC divided the vendors into three groups: most highly rated, highly rated and favorably rated. The research firm's findings? Not surprisingly, the top-rated companies were those that have the most exposure in the industry, such as IBM, Digital Equipment Corp., Hewlett-Packard Co. and Microdata Corp.

In general, most of the ratings ranged in the 3.0 to 3.5 range with a 4.5 the highest rating in any category, the report stated.

Four Top Ratings

The four most highly rated vendors in the survey, in terms of their overall hardware, were DEC, Four-Phase Systems, Inc., Modular Computer Systems Corp. (Modcomp) and Microdata. However, a number of firms out-distanced others in specific categories, such as processor price and reliability. For instance, while Tandem Computers, Inc. finished in the second tier — receiving a "highly rated" score — in terms of CPU reliability it was rated numerically higher than any other vendor in the survey. IBM followed the California-based computer maker in second position with DEC a close third.

Texas Instruments, Inc. led the pack in terms of CPU price, tailed by Wang Laboratories, Inc., Prime Computer, Inc. and Basic Four. In peripheral reliability, IBM outshined its competitors while Basic Four, DEC and HP trailed close behind.

When asked to rate vendors on their software reliability, users placed Microdata far ahead of the other vendors in the survey. Basic Four was rated a far second, followed by DEC and IBM. Microdata also placed first in terms of software price, outdistancing other vendors by a wide margin, the IDC report stated.

Finally, when asked to rate vendors on their service, IBM finished in first place in terms of maintenance quality and support followed by Basic Four and Microdata. DEC, HP, Four-Phase, Systems Engineering Laboratories, Inc. and Quantel Corp. also received high ratings.

Additional information on the survey and the report can be obtained from IDC's Continuous Information Services Department, 5 Speen St., Framingham, Mass. 01701.

	Hardware Summary	Software Summary	Service Summary
Most Highly Rated	DEC* Four-Phase Modcomp Microdata	Microdata* DEC Hewlett-Packard	IBM* Microdata Basic Four
Highly Rated	Tandem IBM Hewlett-Packard General Automation Prime Wang Data General	IBM Wang Basic Four Four Phase Texas Instruments	DEC Hewlett-Packard Qantel
Favorably Rated	Basic Four Texas Instruments Qantel Perkin-Elmer NCR Honeywell SEL	Data General General Automation SEL Tandem Burroughs Sperry Univac NCR Qantel Datapoint Honeywell	Four Phase Honeywell SEL Tandem Texas Instruments Wang Data General Sperry Univac Prime NCR Burroughs

IDC Chart

In the above summary of evaluations of system suppliers, the asterisk denotes the top-rated company in each category.

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Microsystem Available For Builders

SEATTLE — A system aimed at contractors, builders and other construction-related industries is available on a turnkey basis from Incom Systems, Inc.

The Construction Analysis Microsystem (CAM) includes general ledger, accounts receivable, accounts payable, payroll and job-costing software. It uses a NEC Information Systems, Inc. PC-8000 microcomputer with two 5¼-in. disk drives and printer.

The CAM hardware/software system costs $3,995 from the firm at 9515 Sandpoint Way N.E., Seattle, Wash. 98115.

Winnie Fits Multibus

CHICAGO — Computer Microcomputer Systems, Inc. has announced an 8-in. Winchester disk subsystem for S-100 or Intel Corp. Multibus systems.

Subsystems are available in 10M- to 120M-byte capacities and come with a power supply, cable and controller.

Prices range from $2,995 for a 10M-byte drive to $9,496 for a dual-drive, 120M-byte subsystem from the firm at 5710 Drexel Ave., Chicago, Ill. 60637.

Color Printer Out for Micros

NORCROSS, Ga. — Printacolor Corp. has announced a color graphics ink-jet printer for IBM and Apple Computer, Inc. microcomputers.

The PG-1000 can print more than 125 shades of color and can print an 8½-in. by 11-in. document in about two minutes. The printer has a resolution of 1,440 dot/line and can be used for text or graphics applications.

The unit costs $4,995, the vendor said from 5965 Peachtree Corners E., Norcross, Ga. 30071.

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Police Turnkey Announced

SAN FRANCISCO — An automated police and fire dispatch and management system has been unveiled by Acctex Corp.

Adam-1 is a turnkey system with records management capabilities, including a microfilm indexing module. Reports can be retrieved and displayed within 15 seconds, according to the vendor.

The software can be based on IBM Series/1, Prime Computer, Inc. and Microdata Corp. equipment; Honeywell, Inc. Ultimate; and Applied Digital Data Systems, Inc. Mentor computers.

Prices start at $95,000 for a system capable of handling from 25,000 incidents/mo up to very large volumes, a spokesman said. The package includes a minicomputer and the software, according to Acctex Corp., which is located at Suite 2025, 601 Montgomery St., San Francisco, Calif. 94111.

Qantel Turnkey Series Aimed at Small Shops

HAYWARD, Calif. — MDS Qantel, Inc. has introduced a turnkey for the under-$5-million job shop manufacturer.

The Job 900 series is said to allow the job shop manufacturer to create cost estimates and quotations, enter orders, track performance through job costs and purchase products and services. The series also reportedly allows the user to schedule and plan capabilities for the shop.

Job 923, 931 and 932 make up the series. The basic Job 923 is comprised of a 20M-byte Qantel processor with 160K bytes of memory, two Qantel VT-3 intelligent terminals, a 150 char./sec matrix printer and all software. It costs $46,500 from MDS Qantel, 4142 Point Eden Way, Hayward, Calif. 94545.

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Drawing Solutions on Screen
The 950's powerful graphics capability can express complex data as clear charts, diagrams, graphs, line drawings or other visuals to facilitate communication.

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Programmable Function Keys
The 950 is equipped with twenty-two user-definable function keys. The operator can short-cut to desired programs and save a lot of time.

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TeleVideo's sophisticated editing features let you insert or delete characters or lines with a wraparound feature for maintaining data as long as you need it on screen.

Ergonomic Keyboard
The 950's detachable keyboard is made for operator comfort. Work close to the screen, or place it on your lap. You decide what is more comfortable and productive.

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TeleVideo's 950 offers the features you'd expect in terminals costing much more than ours. And most of these features are also offered in our 925, at even a lower price. Both terminals are built with TeleVideo reliability, both engineered for high performance.

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California/Santa Ana 714-557-5095; Sunnyvale 408-745-7760; Georgia/Atlanta 404-255-9338; Texas/Dallas 214-980-9978; Illinois/Chicago Area 312-351-9350;

Micro Boasts 128K RAM, Based on Intel 8086

SEATTLE, Wash. — Seattle Computer, Inc. has announced the Gazelle 8086, a 16-bit microcomputer.

The processor is based on the Intel Corp. 8086 microprocessor and includes 128K bytes of random-access memory, three RS-232 serial ports and one parallel port, two 8-in. double-sided, double-density floppy disk drives that supply up to 2.5M bytes of storage and the firm's MS-DOS operating system, the vendor said.

The price of the system begins at $5,995, including a Basic interpreter.

Seattle Computer is located at 1114 Industry Drive, Seattle, Wash. 98188.

Compatible With IBM Micro

Columbia Data Offers 16-Bit Unit

COLUMBIA, Md. — Columbia Data Products, Inc. has introduced a 16-bit personal computer that it said is compatible with the IBM Personal Computer.

The Multi-Personal Computer family supports single- and multiuser configurations for personal and professional business and industrial and scientific applications.

Several configurations are available, including the Model 1600-1, which lists for $2,995 and features a 16-bit Intel Corp. 8088 processor, 128K-byte random-access memory with parity and two RS-232 serial ports.

The 1600-1 also features a Centronics Data Computer Corp. parallel port, interrupt and direct-memory access controller, counter/timer, dual floppy disks with 640K bytes of storage, Winchester disk and keyboard interfaces and eight expansion ports.

Two Winchester hard disk

Multi-Personal Computer

configurations, Models 1600-2 and 1600-3, feature a 320K-byte floppy disk and 5M- or 10M-byte hard disk storage. The 1600-2 costs $4,995; the 1600-3 costs $5,495 from 8990 Rt. 108, Columbia, Md. 21045.

IMS Micro Z-80 Based

CARSON CITY, Nev. — IMS International Corp. has announced the 5000 IS, a microcomputer based on the Zilog, Inc. Z-80 that can be used as a stand-alone desktop processor or in a multiprocessing environment.

The processor was designed around the IEEE standard S100 bus architecture. The unit is available with a 1M-byte floppy disk drive or a 25M-byte Winchester disk.

The unit comes with a standard 64K bytes of main memory, and up to four I/O processors may be attached to the unit to accommodate a multiprocessing environment, the vendor spokesman said.

A base system with 64K bytes of main memory and one floppy disk drive costs $3,495, the vendor said from 2800 Lockheed Way, Carson City, Nev. 89701.

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TeleVideo Systems, Inc.

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Suggested retail prices for TeleVideo 950, $1495, TeleVideo's 925, $1295, including keyboard, cable and local taxes – Continental U.S.A., Alaska and Hawaii.

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Mini Bits

Tariff Rate Analysts Receive Turnkey System

METUCHEN, N.J. — A microprocessor-based turnkey system said to increase the productivity of tariff rate analysts by 200% to 300% has been introduced by Transportation Concepts & Services, Inc.

Date-Rate, first in a series of programs to be offered under the turnkey Trans-Port system, is a combination of Apple Computer, Inc. Apple II Plus microcomputer and user-friendly menu-driven software.

Trans-Port with Date-Rate will be available in September for under $6,000, a spokesman said from 20 Highland Ave., Metuchen, N.J. 08840.

Z80-Based System Handles Data Entry, Transmission

CHICAGO — Interdata, Inc. has announced a data entry and transmission system based on the Zilog Corp. Z80 microprocessor.

The Entry and Transmission Service (ETS) automatically collects and edits daily trade and accounting data and provides information to exchange clearing houses and accounting services. ETS features fully integrated editing routines and prelists. ETS systems cost between $20,000 and $40,000 depending on the configuration, the vendor said from Suite 1919, 343 S. Dearborn, Chicago, Ill. 60604.

Expanded Disk Drive Storage Out for Radio Shack TRS-80

CANOGA PARK, Calif. — Expanded disk drive storage for Radio Shack's TRS-80 personal computer with up to 4M bytes of floppy disk storage for the TRS-80 Model III is now available from Interface, Inc.

For internal storage on the Model III, the vendor offers: a single-sided drive with 40 tracks and 250K unformatted storage for $215, a single-sided drive with 80 tracks and 500K unformatted storage for $335, a double-sided drive with 40 tracks and 500K unformatted storage for $335 and a double-sided drive with 80 tracks and 1M byte of unformatted storage for $435. For external storage on the Models I and III, there are: a single-sided drive with 40 tracks and 250K of unformatted storage for $315, a single-sided drive with 80 tracks and 500K of unformatted storage for $435, a double-sided drive with 40 tracks and 500K of unformatted storage for $435 and a double-sided drive with 80 tracks and 1M byte of unformatted storage for $535.

Interface is located at 7630 Alabama Ave., Canoga Park, Calif. 91304.

Micro-Sci Introduces Drives Designed for Apple III

SANTA ANA, Calif. — The Micro-Sci division of Standun Controls, Inc. has announced three disk drives for Apple Computer, Inc. Apple III processors.

The low-end A4 drive features a capacity of 143K bytes and costs $449. The mid-range A73 drive has a 286K capacity and costs $649. The A143 drive has a 572K byte capacity and costs $799, the vendor said.

The units feature a 5-msec seek rate and up to three drives can be linked in a daisy fashion, the vendor said from 2158 S. Hathaway St., Santa Ana, Calif. 92705.

Intelligent Controller Line Offered By Alloy Computer

NATICK, Mass. — Alloy Computer Products has introduced a family of intelligent controllers said to link IBM-compatible nine-track formatted tape drives to a variety of popular microprocessor busses. The Intelligent Nine-Track System (ITS) family will unburden the main processor of the tape drive control task and was designed for multiprocessor and multiuser systems.

The series reportedly features software-select-able Ascii and Ebcdic code conversion, and software support is under a variety of operating systems including Digital Research, Inc. CP/M and MP/M.

Controllers in the ITS family are proiced at $850 from Alloy Computer Products, 12 Mercer Road, Natick, Mass. 01760.

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Series of Line Printers Out For System/23 Datamaster

BLUE BELL, Pa. — A series of high-speed line printers for the IBM System/23 Datamaster has been introduced by National Computer Products, Inc. (NCP).

The NCP 23 series includes the 200-line/min M200 Matrix Printer, the 300-line/min B300 Band Printer and the 600-line/min B600 Band Printer. All are plug-compatible with the IBM 5242 Matrix Printer, according to the vendor.

NCP 23 series printers reportedly plug directly into the Datamaster printer attachment port using the Datamaster printer interface — Smart Box 1.

All models have 132 print positions at 10 char./in., 6 or 8 line/in. vertical spacing, forms length select switch, diagnostic display, ribbon cartridge and self test.

Prices atart at $6,000 from the firm, which can be reached through P.O. Box 154, Blue Bell, Pa. 19422.

Controller Bows For S-100 Bus

BOSTON — Arts Computer Products, Inc. has announced a communications board designed to interface asynchronous, Ascii terminals and/or parallel input keyboards to the S-100 bus.

The Audio Input/Output Board (AIOB) is said to provide the capability of generating synthetic voice as well as a "click" for silent keyboards. Three serial asynchronous I/O ports, a special-purpose parallel I/O port, a general-purpose parallel I/O port and an audio amplifier can be used in the development of talking computers, a company spokesman claimed.

The AIOB costs $625 from the firm at Suite 1260, 80 Boylston St., Boston, Mass. 02116.

Memory Card Fits IBM Micro

SEATTLE, Wash. — Seattle Computer, Inc. has announced Ram+, a memory card for IBM Personal Computers which reportedly offers up to 256K bytes of memory.

The unit is said to have a built-in RS-232 serial port and is available in 64K-, 128K-, 192K- and 256K-byte capacities.

The memory card is also equipped with the firm's Flash Disk software, which allows the Personal Computer to address the card memory as if it were disk storage, according to a spokesman for the vendor.

The 64K-byte card costs $475, the 192K-byte card costs $675, the 192K-byte card costs $775 and the $256K-byte card costs $925, the vendor said from 1114 Industry Drive, Seattle, Wash. 98188.

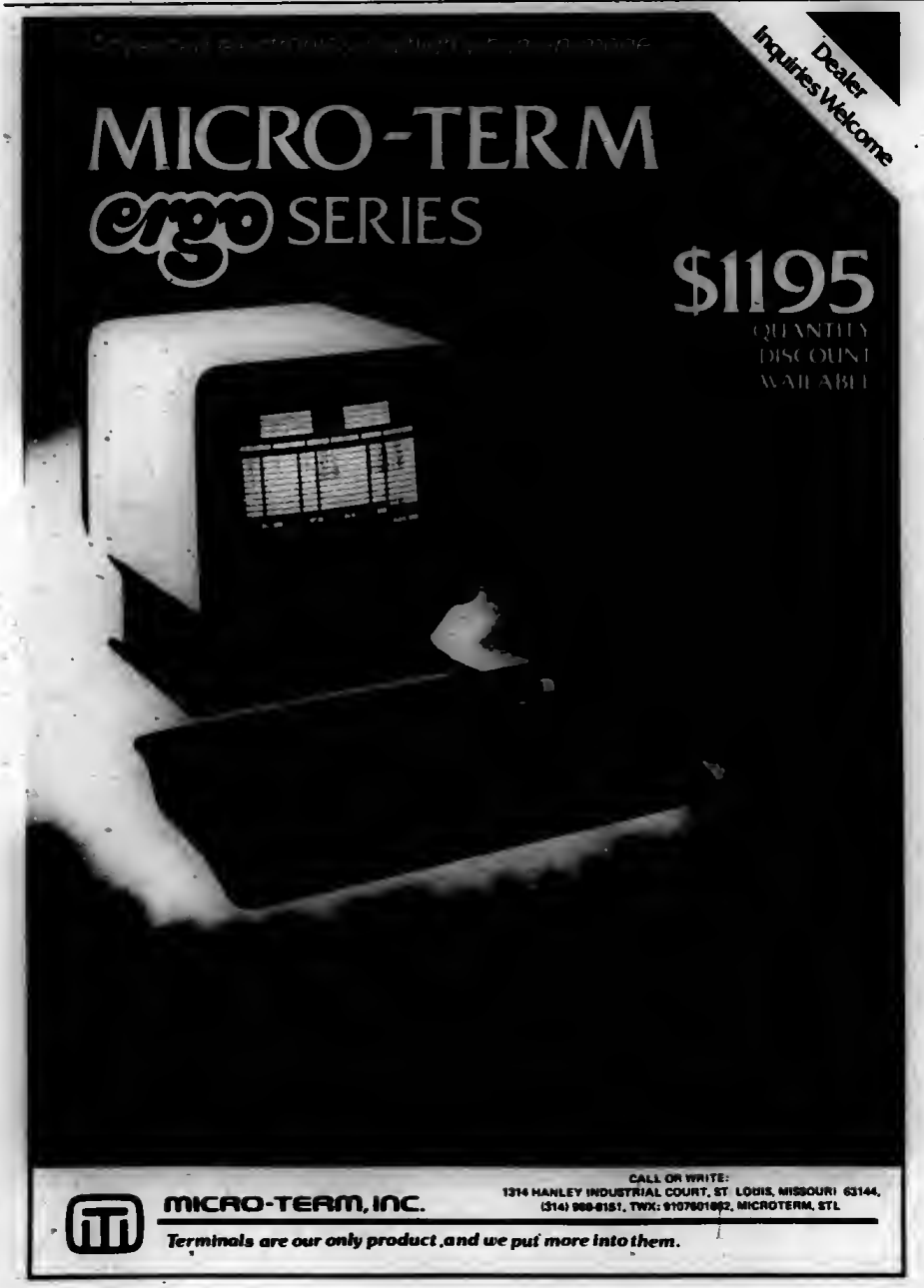
Disk System Out for Apple II

MOUNTAIN VIEW, Calif. — Davong Systems, Inc. has introduced a hard disk system for the Apple Computer, Inc. Apple II computer in formatted memory capacities of 5M and 12M bytes.

The Davong Hard Disk will support Apple DOS 3.3, Apple Pascal and Digital Research, Inc. CP/M operating systems. The unit reportedly can mix all three systems on the same disk.

The prices are $1,995 for 5M bytes formatted or 6.4M bytes unformatted and $2,695 for 12M bytes formatted or 14M bytes unformatted.

Davong Systems is located at 1061 Terra Bella Ave., Mountain View, Calif. 94043.



Package Provides Electronic Mail For Apple, Corvus

SANTA CLARA, Calif. — An electronic mail software package for Apple Computer, Inc. Apple II and Corvus Systems, Inc. Corvus Concept computers is available from Software Connections, Inc.

The Mail Monitor is said to allow users of local-area networks to send letters or data to each other. An optional version that supports a modem allows information to be transmitted over telephone lines to distant networks. Apple II and Corvus Concept computers can be mixed on the same network, the vendor said.

The product contains two programs: the central control post office program, which runs on a dedicated Apple II, and the mail box program, which runs on each user computer on the network. The post office program acts as the main distribution center for all mail. The local mail box program is run by the user to create and send letters to the post office for distribution to other user locations and to collect mail distributed by the post office.

One letter can be addressed to a specific location or to a general distribution list, the vendor said. Senders are notified when any letter has been received by everyone on the address list. Data or text files can be sent along with a letter. A printer spooler utility is supplied as part of the package. It can be used to spool text files to a shared printer attached to the central post office station, the vendor said.

The price of the package including Apple II post office and Apple II mail box is $495. The Mail Monitor with modem support is priced at $750. For communications over telephone lines, each local network must have its own Mail Monitor package with modem support.

Software Connections is located at Suite 17, 1800 Wyatt Drive, Santa Clara, Calif. 95054.

OA Systems for Execs Yield Productivity Gains If Solution For Software Ills Found: Study

LEXINGTON, Mass. — Installing special office automation systems to support executives and managers will improve their productivity significantly, but personnel and software problems must be overcome before the system's full potential is realized, according to a recent report from David A. Curtis & Associates.

The Economics of Office Automation maintains that the introduction of computers and word processing was easy compared with the problems facing companies interested in installing advanced OA systems. However, the 206-page study goes on to note the benefits from a successful system will make the effort worthwhile.

Advances in computer and communications technology have facilitated the automation of many secondary office tasks such as document preparation, information retrieval and bookkeeping.

Primary Tasks Neglected

In comparison, the primary tasks performed by managers and executives have been neglected, the study claims. Primary tasks are mainly intellectual or interpersonal activities including opportunity identification and analysis, goal setting, planning, problem identification and resolution and more.

The study identifies primary tasks as the most important unfulfilled area for OA, addresses ways technology can improve the productivity of the staff performing them and includes economic analyses on the competing technologies.

The major conclusion was that new OA systems will yield large savings if they improve the effectiveness of the primary workers rather than their efficiency. "For executives and managers, productivity is related to the speed of thought processes, which cannot be expedited by investments in capital equipment, only supported," it says.

The study concludes that this support can be provided by computer-based workstations and an intraoffice communications network connecting them to each other and to mainframe computers. "Ironically," it adds, "some recently introduced executive workstations, which received lots of publicity, add secondary tasks like text entry and layout to the executive's work load rather than emphasizing support for his primary tasks."

No matter how efficiently the executive performs the secondary tasks, it is an ineffective use of his time, and future workstations must eliminate this unnecessary burden, according to the report.

Next-generation workstations will improve effectiveness by using sophisticated software to aid the executive in identifying priority tasks, organizing resources to address them and managing time. The software will have many characteristics of the "expert" artificial intelligence programs used by some legal and medical practitioners.

Main Problem Area

This will be the main problem area in introducing new technology. Many people are nervous about computers, and they will resist strongly if they feel the new OA systems are controlling their activities, instead of the users controlling the systems. The report claims systems must be designed to support users, not dominate them.

The communications network will link staff supporting the executive in a group local-area network. The main intraoffice communications network will have several group local nets attached to it. They may be either physical groups for staff situated close to each other or virtual (software-linked) groups for staff distributed throughout the building, but working for the same executive. Virtual-group local nets will require special communications software for their implementation.

The Lexington-based consulting firm ex-

(Continued on Page 56)

For NCR Systems

SCH Beefs Up 'Multiword'

CINCINNATI — Software Clearing House (SCH) has announced enhancements to its Multiword word processing package for NCR Corp. systems running under the Imos III and Imos V, IRX and VRX operating systems.

Enhancements include an increased line size from 66 to 79 characters, a full-screen 16-line display and faster print speed, the vendor said.

The package costs $1,995. SCH is at 771 Neeb Road, Cincinnati, Ohio, 45238.

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Printer Subsystem Runs On IBM System/34, 38

BEDFORD, Mass. — Continental Resources, Inc. is offering a high-speed, letter-quality printer subsystem for IBM System/34 and System/38.

By integrating either a System/34 or System/38 adapter and a General Electric Co. Model 510 corresponder, Continental reportedly can offer a high-speed (510 char./sec), letter-quality printing capability on the IBM twin-axial network. This subsystem is said to be totally compatible with the IBM 5256 protocol.

The system costs $5,395 to purchase or $300/mo for rental, Continental said from 175 Middlesex Tnpk., Bedford, Mass. 01730.

Multimedia Self-Instruction

Honeywell Offers OA Training

WALTHAM, Mass. — A multimedia self-instructional training system is available for Honeywell, Inc.'s office automation systems.

The Learner-Paced Self-Instructional System reportedly combines audio, workbook and video workstation training.

It can be used by professional managers, office administrators and general office workers.

The program presents the specifics of typing, formatting text, advanced editing, filing, document management, abbreviations, sorting, merging, mathematical functions and calendar, as well as forms and printing, the vendor said.

The complete instructional system reportedly consists of an administrator's guide, six audio cassettes, three student workbooks, a participant's guide, forms ruler and grid and procedures summary.

The price is $235. In addition, a student package, consisting of the workbooks and a summary of procedures is available for $95, according to Honeywell.

Honeywell is located at 200 Smith St., Waltham, Mass. 02154.

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Study: OA Aids Execs

(Continued from Page 55)

amined digital private-branch exchanges (PBX), data concentrators and switches used in conventional data networks and local-area networks for use in the intraoffice communications network. It foresees roles for each.

The digital PBX will supply telephone services and data switching for special terminals.

There will be at least one local-area network such as Xerox Corp.'s Ethernet, Wang Laboratories, Inc.'s Wangnet or another manufacturer's system in each building.

The group local nets, virtual-group local nets and the digital PBX will be stations on the main local nets.

Finally, the study suggests that those workstations and terminals which need frequent or lengthy access to the company's main computing resources will be attached to another data switching network using a conventional data concentrator or switch.

The report is available for $895 from David A. Curtis & Associates, 4 Bushnell Drive, Lexington, Mass. 02173.

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Mortality Rate Rising

Recession Hurting Recruitment Firms

By Robert Batt
CW West Coast Bureau

LOS ANGELES — The financial problems faced by many industries are having an adverse impact on executive recruitment firms specializing in DP professionals.

The annual mortality rate for executive search firms has risen in the past year from the typical 30% to between 50% and 60%, according to Jeffrey Allen, an attorney specializing in executive recruitment.

Many of these companies were heavily engaged in DP recruitment.

Lowell Foster, vice-president at DP recruiters Hudson and Associates, maintained that the volume of business activity is down considerably from a year ago, with many companies experiencing e 40% drop in revenue.

"Between 20 and 25 large headhunter organizations have folded in California alone over the past few months," Allen asserted. "Recruitment firms everywhere are having a problem due to the downturn in economic activity. They are consolidating operations and laying off staff.

"In the Southwest, for example, the bottom has fallen out of the energy industry and so demand for DPers in that industry has fallen.

"Even the finance industry is not immune and less MIS [management information systems] epecialists are being hired. Only hardwere engineering continues to do well," he added.

How to Survive

Allen, who is general counsel for the California Association of Personnel Conultants, said two things are necessary to survive in today'e DP recruitment market — a sense of timing and a positive professional ettitude.

One company that did not survive was VIP Agencies, Inc. The agency, which folded in July, represents one of the most dramatic failures in recent headhunter history. VIP, based here, had annual revenues of between $10 million and $14 million and more than e dozen offices nationwide. As euch, it was one of the biggest recruitment companies in the country and had e very active DP sector specializing, in particular, in scientific and commercial programmers.

VIP went under as a direct result of the cash-flow problems facing recruiters. "VIP becama too top heavy. It had too many fixed expenses, and it was unable to maneuver as market conditions changed," Allen declared.

Several telephone interviews conducted by *Computerworld* with other headhunters, however, ehowed that the general consensus was VIP had overextended itself. It suffered severe cash-flow problems because it was not responsive to change, end outmoded ideas led to e creeping inertia

(Continued on Page 62)

Government Unit Set at Burroughs

DETROIT — Burroughs Corp. has established e group dedicated to the government sector. Called System Development Corp. (SDC) — A Burroughs Company, the organization is the offshoot of Burroughs' merger with SDC last year and the firm's Federal and Special Systems Group (F&SSG).

The new unit's administrative headquarters is in Camarillo, Calif. Mejor offices are also in McLean, Va.

Heading up the new venture will be Dr. George Mueller, currently chairman and chief executive officer of SDC. Robert O'Donnell, president of F&SSG, and Grant Hansen, president of the Systems Group et SDC, were named executive vice-presidents of the unit.

The new entity will have six operating units. Burroughs Standard Products Group will have responsibility for marketing the firm's standard DP products to government departments. The Services Group includes facilities management, line of business processing and programming services. This group will serve the Medicaid and Medicare programs, among others.

Other groups comprising the reorganized government business unit are the Cuetom Products Group, the Systems Group, the Air Force Systems Division and the Research and Development Division.

'Vendor Beware: The Copyright Laws Require That You Exercise Caution'

By Ronald L. Johnston
Special to CW‡

Meny vendors of computer systems utilize software houses or other independent contractors to develop systems for resale.

However, the Copyright Act contains potential pitfalls for unwary vendors that believe they own euch software — or so would ettest e number of troubled companies that heve contacted legel counsel in recent yeers.

Many vendors of computer systems believe that they own the applications programs they distribute with their hardwere products. A misconception ebout the ownership of the product can arise because the vendor has made a formal purchase of all rights to that software from e third party or because of e less formal understanding it has with a software house or independent contractor programmer concerning who owns the programs that are being developed for the vendor or its customers.

Vendor beware: The copyright laws require thet you exercise caution.

The copyright laws generally provide that the independent contractor (for example, a software house) that authors the programs owns the copyright — the right to reproduce, dietribute and prepare derivetive works based on the computer program — ebsent an agreement to the contrary.

Three 'Traps'

A softwere distributor ehould be eware of the following "traps":

• Trap No. 1: The transfer of the ownership of a copyright generally can only be accomplished by an instrument in writing, signed by the transferring party. As e transferee owner without e written agreement, you may well have

(Continued on Page 60)

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• INTEGRATED SYSTEMS provide balanced data with single entries.	• SEPARATE SYSTEMS duplicate work and increase out-of-balance risks.
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Vendors, Beware Of Copyright Act

(Continued from Page 59)

arguments in support of your ownership, but why take chances? Get it in writing.

• Trap No. 2: Even if your ownership is established in writing, be clear as to what rights you "own" because the law may not make it clear for you. The copyright laws distinguish between the ownership of a material object in which a work is fixed and the ownership of a copyright (an intangible right). The transfer of the ownership of one (for example, the computer tape) does not of itself convey rights in the other (for example, the copyright). Thus, use clear writing.

• Trap No. 3: A later transfer of the ownership of a copyright that is recorded with the Copyright Office generally takes priority over an earlier transfer, if the first is not transferred on time with the office.

Thus, if you have purchased the exclusive rights to software, and the programmer later sells the same rights to someone else (because the programmer disputes your ownership or needs the money), you may lose to the subsequent transferee if you have not filed your written agreement with the Copyright Office.

(You should not automatically assume that registration of all programs and recordation of all transfers is in your best interest.)

The three traps mentioned above constitute only the beginning of a list of potential problems for a distributor of software that has not adequately considered the legal protection of its rights to the software.

Moreover, as is the case with any legal regulation of a complex commercial setting, there are exceptions to and potential avenues to get around even these few rules. But the point is: Beware, and even better, keep your affairs in order from the beginning with clear written agreements.

Lawsuits are expensive, they may not be decided until after your product window has closed and they most certainly will be decided by people who do not understand your industry. And even in the easiest of cases, the results will be uncertain.

Johnston is a member of the Los Angeles law firm of Blanc, Gilburne, Peters, Williams & Johnston. The law firm specializes in general business and computer law. He is the chairman of the University of Southern California's Computer Law Institute.

Graphics Center Hits N.Y. Financial District

NEW YORK — Landart Systems, Inc. has announced the establishment of a graphics center in New York's Financial District.

Landart System's graphics center reportedly provides users with the opportunity to receive computer graphics training and assistance in developing graphics applications. In addition, it provides hands-on experience with graphics CRT terminals and plotters, the spokesman said.

Further information can be obtained from Landart Systems, which is located at 140 Cedar St., New York, N.Y. 10006.

Revenues Up 21%

DEC Earnings Up 22%

MAYNARD, Mass. — Digital Equipment Corp. reported a 21% gain in revenues and a 22% growth in earnings for its latest fiscal year ended July 3.

For the year DEC reported revenues of $3.9 billion, up from the $3.2 billion in revenue for fiscal 1981.

Earnings for the year rose to $417.2 million or $7.53 per share, up from the $343.3 million or $6.70 earned last years.

In its final quarter DEC had revenues of $1.1 billion, up from revenues of $938 million in the same quarter a year ago.

Earnings for the fourth quarter totaled $121.7 million or $2.20 per share, up from $116.9 million or $2.19 per share in the final quarter of the prior fiscal year.

The company credited overall growth to its continued investment in research and development. In fiscal 1982 R&D expenditure totaled $350 million or 9% of revenues, up from the 7.9% of revenues expended last year.

The company said it also spent $511 million on new plant, property and equipment.

Shipments during the fourth quarter brought DEC's installed base to more than 380,000 units. The firm employed 67,700 people at the end of the fiscal year.

Mergers & Acquisitions

Computer & Communications Technology Corp. (CTT), a manufacturer of magnetic recording heads and minidisk drives, and **Rotating Memory Systems, Inc.** (RMS), a supplier of media disk drives, announced that the proposed merger of RMS into CCT has been completed.

RCA Communications, Inc. has acquired **Cyclix Communication Network, Inc.**, a privately held company that provides data communications through a domestic satellite network.

Sydney Development Corp., a public software company, has acquired the assets of **English Bay Systems, Inc.**, a private software company. With the firm, Sydney also acquired two complete microcomputer-based portfolio management systems.

New Companies

Fourth Generation Software Services, Inc. is a firm specializing in the development and implementation of business information systems using nonprocedural languages. The firm will operate from offices in the Clinton Professional Center, 65 Old Highway 22, Clinton, N.J. 08809.

Individual Software, Inc. is a company formed to offer a series of tutorial software programs designed to instruct first-time IBM Personal Computer users. It is located at 24 Spinnaker Place, Redwood City, Calif. 94065

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Headhunters Agree: Caution Best Policy

By Robert Batt
CW West Coast Bureau

ENCINO, Calif. — With the recession hitting headhunters particularly hard (story on Page 59), companies specializing in DP recruitment must adopt a more professional approach if they are to succeed.

"Most people in the DP recruitment business have never lived through the type of economy we are now experiencing," claimed Paul Ross, vice-president at Executive Recruitment Agency (ERA), based here. "In a buoyant economy you can get away with mistakes, but in today's economy, without 100% professional dedication, you will not succeed," he said.

The first question a headhunter needs to answer is: Does the client have a genuine need for a computer professional? The single greatest reason for losing money is because recruiters waste time on inquiries that are not genuine, Ross asserted. "It takes years of experience to know what a genuine inquiry is," he said.

In assessing whether an inquiry is real, headhunters should answer the following questions:

- How long has the job vacancy been open?
- How many people have been interviewed to date?
- How integral is the vacant DP position to the operation of the DP department, senior management's responsibilities and the product development cycle?
- How flexible are the employer's requirements?

"If the need is real, there has got to be some flexibility," according to Rod Asher of ERA. "If a manager's job promotion depends on you finding a guy to fill the job, your search is likely to prove more fruitful."

The ability to answer such questions depends on recruiters developing a close working relationship with the company that is looking for a new DP employee. But this is something that headhunters specializing in computer professionals have largely overlooked, recruiters reported.

Good clients do feel a sense of loyalty to the search firm, but this situation has not been as prevalent in DP as in other industries. This is because traditionally good DPers have been able to pick and choose the companies for whom they work.

Another headhunter commented: "The key to this business is to know your clients and what their needs are. But many headhunters overlook this strategy. They are impersonal about it and treat both the DP professionals and employers as pieces of meat to be manipulated."

Recruiters Feeling Recession

(Continued from Page 59)

within the agency.

For every big agency that gets into financial trouble, there is a score of other smaller agencies who are struggling, and many of these have also gone out of business.

One such company is Zucker Rubenstein Consultants, Inc., which closed down in February. The privately held company, which lasted less than two years, specialized in DP recruitment.

"We didn't have the capital to bring our young recruiters up to speed quickly enough," Richard Rubenstein, one of the company's founders, explained.

The cost of doing business has increased dramatically in the past year, and this is hurting many smaller agencies, forcing them out of business.

Previously, you made 10 calls in order to find a suitable person to fill a vacancy; now you have to make 50, Rubenstein said.

As a result, companies are making less placements while using more working capital, and it became obvious to us that only the stronger, more established professional companies will survive, he added.

Vital to Survival

With most agencies working on a commission basis, a successful placement is vital to survival. But now many companies are slow to pay fees owed to recruiters.

"I know of one executive search company that is owed $160,000 in fees by one client alone. When you think that the average placement fee is $8,000, that adds up to 20 job placements that have not yet been paid for," Allen claimed.

To succeed in today's market conditions, executive recruiters need to become well versed in the DP field. As a result, only the most professional approach will work consistently. For many DP headhunters this presents problems.

"Over the previous five to six years, there has been a dearth of individuals, so its been fairly easy to make a living in DP recruitment no matter what your level of expertise," according to John Kenneth, president of Mallory Data Systems, a recruitment firm based in New York. "Companies who are now hiring people are looking to fill specific needs, for example, people with telecommunications or data base backgrounds.

"The problem is that very few companies are geared to carry out searches for specific skills. Recruiters have not been trained to do this," he said.

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Candle Corporation, a leader in the technology of performance measurement software, now has openings in its Los Angeles R&D center for senior and intermediate level software development professionals in the areas of IMS, MVS, CICS, and VM.

Strong S/370 Assembler Language programming skills and knowledge of internals for any of the above systems are required.

These are exceptional opportunities with tremendous growth potential. If you are interested in joining one of today's fastest growing software development firms, call or send your resume to Joanne Richardson.

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Supershorts

Compath News has entered into the marketing of data products by the introduction of Compath Data Service (CDS), a device that multiplexes voice and data calls simultaneously over one-pair wiring. Compath will offer the Teltone voice and data multiplexer manufactured by Teltone Corp. and the Data Voice Switching System (DVSS) from Rockwell International Corp. as part of CDS.

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Perkin-Elmer Corp. has established an operating group, the Semiconductor Equipment Group, to consolidate its efforts in the semiconductor industry equipment market.

— — —

AEG-Telefunken and United Technologies Corp. have reached an agreement in principle to form a joint venture, Telefunken Bauelemente Gruppe (TBG), which will operate the business of AEG-Telefunken's Elektronische Bauelemente Division in West Germany. This joint venture calls for TBG and United Technologies to form a new company, Telemos Electronic, which will concentrate on the development and production of custom semiconductor devices using Nmos, Cmos and gate-array technology.

— — —

Information Science, Inc. (Insci) has signed an agreement with Computer Pictures Corp. whereby Computer Pictures' color graphics systems will be fully integrated with Insci payroll and personnel software programs.

— — —

Gould, Inc. has announced it will give $750,000 to Stanford University's Center for Integrated Systems (CIS). The center is an effort among government, industry and academia to train professionals in very large-scale integration (VLSI) semiconductor technology. As one of 18 corporate sponsors, Gould will contribute $250,000/year over a three-year period.

— — —

Representatives of seven APL computer services companies have formed the International APL Micro Association, to provide international support to users of a variety of 16-bit microcomputers that have Motorola, Inc.'s MC68000 microprocessor and the Computer Company's APL.68000 interpreter in common. The association will consist of Datema A/S, Denmark; APL Management Service, West Germany; BSO Management Support b.v., Holland; Datema A/S, Norway; Progress Data AB, Sweden; Micro APL Ltd., UK; and The Computer Company, U. S. By providing APL support internationally, the association will link microcomputer manufacturers, their channels of distribution and their end users.

— — —

Western Electric Co. plans to phase down production over the next year at its manufacturing facility in Lisle, Ill., and will build up operations at its Network Software Center, also located in Lisle. The company plans to move the production work gradually to its plants in Oklahoma City and Columbus, Ohio. Meanwhile, it is transferring more than $12 million of facilities from the Lisle plant to establish an engineering model shop at the software center. The company will offer its employees job transfers to these or other Western Electric and Bell Laboratories facilities wherever possible, but some 650 employees could be laid off.

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Data General Corp. has donated an Eclipse MV/8000 computer system, valued at nearly $400,000, to the Department of Electrical and Computer Engineering at Northeastern University.

— — —

Digital Equipment Corp. has granted the University of Massachusetts/Amherst Coins Research Group a network of 10 VAX 11/750 computers as well as funds for auxiliary equipment, software and graduate student assistance. In addition, The National Science Foundation and the Defense Advanced Research Projects Agency will be jointly contributing an additional $350,000 to help fund this effort. The researchers will focus their efforts on artificial intelligence.

— — —

Computer Task Group, Inc. (CTG) has announced the availability of CTG professional services geared specifically to users of the Integrated Database Management System from Cullinane Database Systems, Inc. CTG, with a nationwide network of 20 branch offices, provides consulting, systems analysis, design and programming services to Fortune 1000 industrial clients, as well as large financial and service organizations.

'This Repair Bill is a Good Example of Computer Crime.'

M&D, Intel Reveal Deal to Develop Interfaces

AUSTIN, Texas — Intel Corp. and McCormack & Dodge Corp. (M&D) have revealed some details of their recently concluded agreement to cooperatively develop interfaces for some of M&D's financial software packages and Intel's System 2000 data base management system.

Under the arrangement, M&D will develop the interfaces between its general ledger package, G/L Plus, and its accounts payable package, A/P Plus, to run with the IBM DOS and OS versions of System 2000.

After the implementation of these two packages, the Needham, Mass.-based M&D will begin developing a similar interface for its purchase order processing software. A schedule for the introduction of the jointly developed products is now being arranged, the firms said.

Both companies will promote and market the interface products, while M&D will be responsible for delivering, installing and providing user training for the new products. Intel will provide consultation for System 2000 users when required.

Contracts & Pacts

VA Seeks Sources For Medical Systems

WASHINGTON, D.C. — The Veterans Administration (VA), through a private contractor, is seeking sources for medical information systems capable of providing automated support in the delivery of direct patient care services and hospital management.

The contractor for the VA, Deloitte Haskins & Sells, said responding vendors and their systems "will undergo a qualification evaluation that will consist of a detailed documentation review, user-site demonstrations and user interviews."

Sources of such systems should submit name, address and the name and telephone number of a contact person to Deloitte Haskins & Sells, Medical Information Systems Study, P.O. Box 1047, McLean, Va. 22101.

Awards

CGA Software Products Group, Inc. has been awarded a contract by the U.S. Air Force, Wright-Patterson AFB, Ohio, for the installation of its Dasd Management System — Pac/Master — at seven locations.

The National Aeronautics and Space Administration has selected Computer Sciences Corp. to negotiate a contract to provide a new inventory management system for the space shuttle.

St. Joseph's Medical Center has signed a five-year contractual agreement for data processing services with Keamed Hospital Systems to provide data processing facilities management and specialized software to hospitals throughout the Northeast.

Scientific-Atlanta, Inc. and Mitel Corp. have announced an agreement in principle to design, manufacture and market a range of satellite communications systems under the trade name Skyswitch. Mitel will license to Scientific-Atlanta new designs in earth terminal technology currently under development. Both corporations will share in the production of the systems, which will combine satellite and telephone/data switching technologies for cost-effective business and long-distance communications.

Integrated Management Services, Inc., developer of a turnkey credit collection system package, has selected Qualex Technology, Inc. to provide storage peripherals for the Hewlett-Packard Co.-based system.

Ball Computer has contracted with Cipher Data Products, Inc. to supply its Microstreamer ½-in. streaming tape drives and 100X compliance-arm tape drives. Ball will purchase a minimum of 800 Microstreamers over a two-year period. The contract also calls for Ball to purchase Cipher's 100X Tape drives.

Orders & Installations

Lundy Electronics & Systems, Inc. announced the receipt of orders totaling $1,490,601 from Ford Motor Co., for Ultragraf three-dimensional interactive graphics design workstations.

Topaz, Inc. has installed its first Powercenter Plus, a power distribution system with microcomputer-controlled power conditioning for protecting computers and peripherals against problem-causing electrical power disturbances, at Ducommun, Inc.

Automation Development, Inc. has sold two Visinet Information Systems to Sullivan & Worcester, a Boston-based law firm.

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Meet the new Burroughs B20 small computer.

Once you get to know the new B20 you'll want to say "I do."

The B20 is ideal for networking. Local or remote. Each B20 can handle multiple workstations, and each workstation can have up to 512K bytes of memory. Each workstation can execute its own interactive application program with its local disk, printer or data communications.

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B20 highlights.

The B20 offers a wide range of communications protocols which provide it with exceptional versatility for its size and price.

Its disk capacity can expand from 500Kb floppy disk to 60Mb Winchester.

The B20 offers a wide range of software, including Word Processing and Multiplan,™ a new, advanced electronic worksheet that's one of the most powerful modeling and planning tools available.

Choosing any data processing system is very much like marriage. Because once you install it, you've formed a long-term relationship with its supplier.

That's why one of the B20's biggest assets is the company behind it. Burroughs has 95 years' experience in managing information for businesses—from the smallest to the largest. So you can depend on the B20 to come with strong, knowledgeable support. Worldwide service. And a total solution that can make networking more productive for you.

For more information on the B20, call 1-800-621-6497, Ext. 101. (In Illinois, call 1-800-572-6724, Ext. 101.)

Multiplan is a trademark of Microsoft Inc.

Burroughs

Building on strength

Nickels & Dimes

Advanced Micro Devices, Inc. has announced the public offering of one million shares of common stock at $23.62 per share.

$ $ $

GTE has increased the quarterly dividend on the company's common stock to 73 cents per share, representing a 2.8% increase. The higher dividend will be payable Oct. 1 to shareholders of record Aug. 23.

$ $ $

Threshold Technology, Inc. has announced that **Siemens Corp.** has provided a $500,000 low-interest loan as part of a financial arrangement giving Siemens the option of increasing its equity position in Threshold. In addition, Threshold received $285,000 in new capital through the sale of stock to a group of private investors.

$ $ $

Comshare, Inc. has acquired 180,000 shares of its common stock in unsolicited transactions over the past several months.

$ $ $

Diversified Technology Partners, Ltd. has filed a registration statement with the Securities and Exchange Commission. The proposed initial offering to the public will consist of 3,300 units of limited partnership interests priced at $5,000 per unit, for an aggregate offering of $16,650,000.

$ $ $

Electronic Data Systems Corp. has announced a quarterly cash dividend of 16 cents per share of common stock to be paid Aug. 31 to shareholders of record Aug. 13.

$ $ $

Atlantic Research Corp. has filed a registration with the Securities and Exchange Commission for a proposed offering of 450,000 shares of common stock. **Bache Halsey Stuart Shields, Inc. and Jefferies & Company, Inc.** are together underwriting the offering in its entirety.

$ $ $

United Telecommunications, Inc. has increased the company's common stock dividend by 8 cents to an indicated annual rate of $1.76.

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Learn how Johnson Systems Software can meet your business objectives. Now, more than ever, you face the dilemma of relating Data Center Resources to corporate objectives to satisfy user demand.

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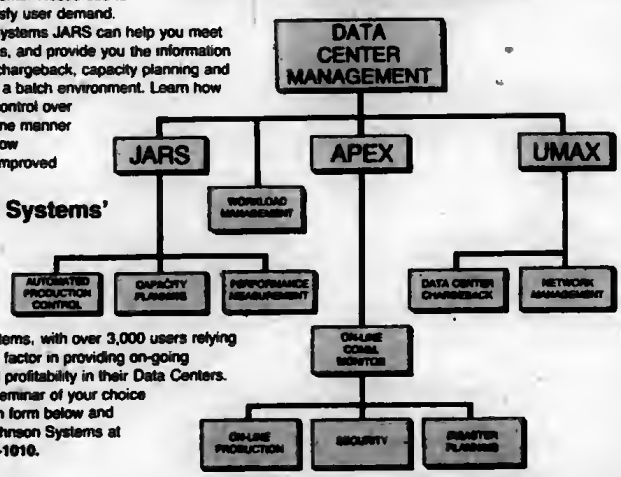

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- ☐ 7 Seattle, WA
- ☐ 19 Detroit, MI
- ☐ 21 Toronto, ON

November
- ☐ 4 Orlando, FL
- ☐ 16 Cincinnati, OH

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Executive Corner

- Donald G. C. Shu has joined Advanced Technical Services, Inc. as executive vice-president and chief operating officer.
- W. James McNerney Jr. has been named vice-president and manager of strategic planning and business development operation of General Electric Information Services Co.
- Warren S. Pyles has been appointed senior vice-president of marketing for ADP Network Services, Inc.
- Stuart F. Dale has been elected senior vice-president of operations for Computer Automation, Inc.
- Mac Graham has been designated vice-president of marketing for EXO Corp.
- Paul L. Wexel has been named vice-president of marketing for GTE Business Communication Systems, Inc.
- Bruce R. Smith has been selected vice-president of U.S. operations in Exxon Office Systems Co.
- Stephen D. Prendergast has joined National Computer Communications Corp. as vice-president of finance.
- Robert N. Liberatore has been promoted to vice-president of worldwide product marketing for Sperry Univac.
- Roberto Maldonado has been named vice-president; Soron Litman, vice-president of marketing; and Lawerence Ciuffitelli, vice-president of North American sales for Pertec Computer Corp.
- Albert Bromberg has been promoted to executive vice-president of operations and Olaf Brauner to vice-president of manufacturing for Information Displays, Inc.
- Aubrey Easterlin has been designated vice-president of sales for Cado Systems Corp.
- Richard Smith has been elected executive vice-president of EXO Corp.
- Roger Johnson has been named president and chief operating officer and Terry Holdt has been promoted to executive vice-president for the Components Group at Western Digital Corp.
- Stephen Wawrzenski has been named vice-president of education for International Computer Equipment.
- Nelson Windsor has joined Computer Specialists, Inc. as vice-president of finance and administration.
- Paul Fay has been appointed executive vice-president of Corodale, Inc.
- Gary Greenfield has been elected vice-president of Research and Development for Execucom Systems Corp.

POSITION ANNOUNCEMENTS

Data Processing Quality Assurance Analyst

Hughes Helicopters, Inc., a leader in the field of military and commercial helicopter manufacturing, has an immediate need for a Data Processing Quality Assurance Analyst.

You will assist in project planning utilizing an automated, network based project planning and control tool. Other responsibilities include performing quality reviews as defined in the system development life cycle; written reports for management, detailing system review findings, and duties associated with the Data Center "Security Officer" function.

Qualified applicants must demonstrate expertise in project management, estimating and planning, system analysis and design, inter-personal skills, verbal and written communication. You must also have 4 years experience in data processing, with the most recent 2 years in project or systems management. Data processing quality assurance background preferred.

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Hughes Helicopters, Inc.

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If you have experience in Compiler design/development and want to apply your ideas in a receptive environment, then the FORTRAN Team wants you as a member.

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This position will require planning maintenance systems and writing maintenance strategy Architect and design data handling systems and specify human elements and test equipment required to perform field-maintenance.

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Primary responsibilities will be the maintenance and development of the software and firmware elements of STC's new CPU. Note: Development Engineer positions are located at STC Computer Research Corp. in Santa Clara, CA.

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For Information Contact:
Rich Hutchison
Personnel Services
Jewish Hospital
(502)637-1535
217 East Chestnut St.
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BUFFALO

Buffalo client with sophisticated data ctr. has multiple openings due to corp. reorganization. The following job descriptions reflect a partial listing of these current openings. Salaries range from $22,000-$45,000.

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These pos. req. bkgrd. in prog. design. Fin'l. appl. sys. ideal for proj. team concept. Must have exp. with lgs. IBM mainframe & COBOL. Several on-line sys. currently involved in conversion effort. $25,000-$30,000 (fee paid).

SR. SYS. ANALYST

Solid record in design & implem. of bus. sys. best fit. Up-thru-the-ranks record must incl. COBOL prog. in lgs. IBM CICS install. Proj. mgmt. respon. incl. manpower scheduling & hvy. user interface. $28,000-$35,000 (fee paid).

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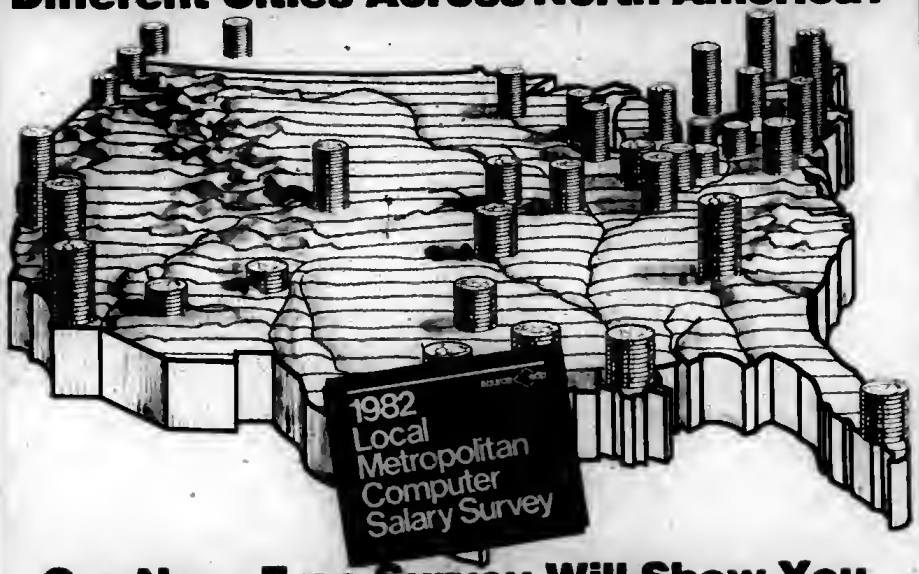
How Do Computer Salaries Stack Up in Different Cities Across North America?



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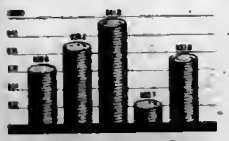
We Surveyed 48 Specific Position Categories in 45 Markets.

In addition to reviewing *national* medians, the Local Survey breaks out salary data by market. Forty-eight specific positions are reviewed in each city. Included are position categories in programming, software, systems design, data communications, mini/micro systems, data base, EDP auditing, computer marketing, management and others—at various levels of experience and at different size computer system sites.



For example, if you're a Data Communications Programmer with over four years of experience, here's how your salary stacks up in just five of forty-five markets surveyed.

That means, for example, a Minicomputer Programmer with two-to-four years of experience will be able to determine what his/her peers make in cities ranging from Albuquerque to Vancouver or Akron to San Diego.

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The new, *Local Metropolitan Computer Salary Survey* is compiled and published by Source Edp, the nation's oldest and largest recruiting firm devoted exclusively to the computer profession. If you're wondering whether your salary is keeping pace—or where your career might head in the future—our report is must reading. Especially in today's competitive environment where smart planning is key to long-term success.

This handy, fold-out Survey breaks out salary information by market and by position category. 2,160 separate figures are reported, which makes this Survey the most extensive one ever undertaken by Source Edp.

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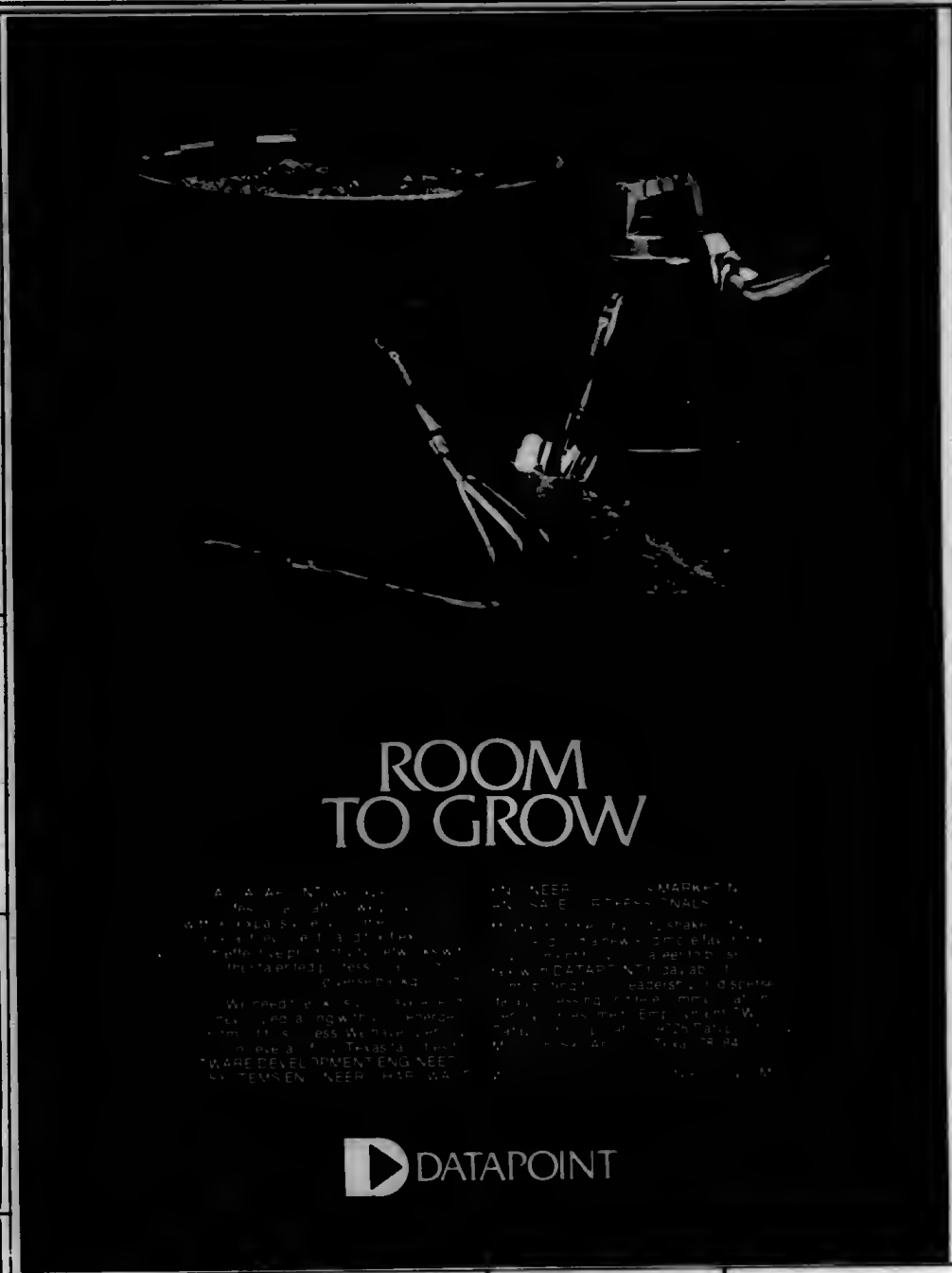

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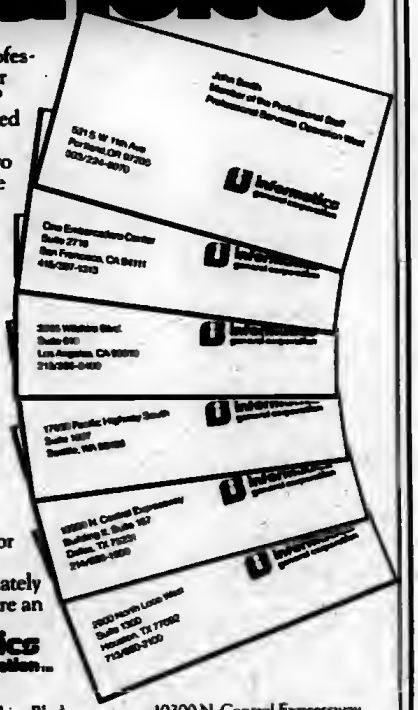

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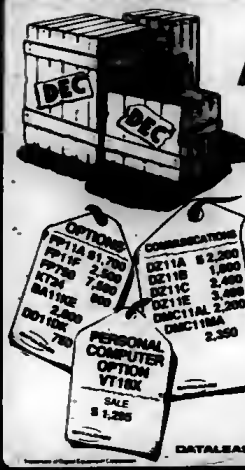

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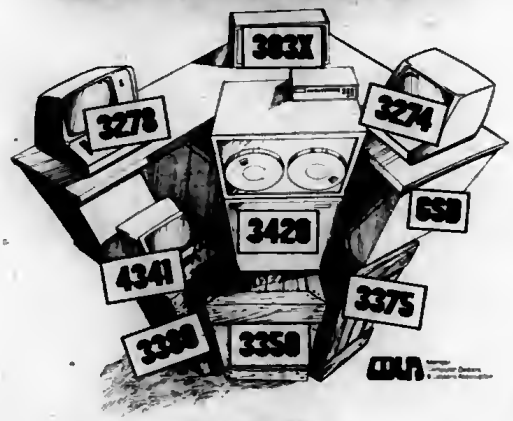

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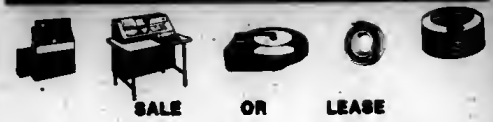

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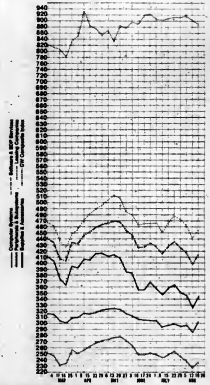

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Computerworld Stock Trading Summary

CLOSING PRICES WEDNESDAY, AUGUST 18, 1982

All statistics compiled, computed and formatted by TRADE QUOTES INC, Cambridge, Mass. 02139

COMPUTER SYSTEMS

EXCH		1981-82 RANGE (1)	CLOSE AUG 18 1982	WEEK NET CHNGE	WEEK PCT CHNGE
N	AMDAHL CORP	18- 40	18 3/4	+ 1/2	+2.5
N	BURROUGHS CORP	28- 72	32 1/8	+2	+6.0
O	COMPUTER AUTOMATION	8- 26	8 1/2	- 1/8	-1.4
N	CONTROL DATA CORP	18- 42	24 3/4	+3 1/4	+15.1
O	CRAY RESEARCH INC	20- 48	22 3/4	+ 7/8	+4.0
N	DATA GENERAL CORP	21- 87	21 3/8	- 7/8	-3.9
N	DATAPOINT CORP	11- 68	12 1/2	+ 7/8	+7.5
N	DIGITAL EQUIPMENT	62-119	67 5/8	+3 1/4	+6.4
A	ECCO INC	6- 19	8 3/4	+ 1/8	+1.8
O	ELECTRONIC ASSOC.	8- 13	8 1/4	+ 3/8	+4.7
N	FLOATING POINT SYST	13- 30	16 1/8	+2 0/8	+15.0
N	FOXBORO	22- 82	22 3/4	+ 0/8	+2.0
O	FULCRUM COMP GRP	1- 3	1/4	0	0.0
O	GENERAL AUTOMATION	3- 16	9 3/8	0	0.0
N	HARRIS CORP	21- 60	23 3/4	- 3/4	-3.0
N	HEWLETT-PACKARD CO	33- 54	41 0/8	+3 3/8	+8.8
N	HONEYWELL INC	60-115	83	0	0.0
N	IBM	48- 73	68 3/4	+5 3/8	+8.4
O	IPL SYSTEMS INC	5- 13	6 1/8	+ 1/8	+2.5
O	MAGNUSON COMP SYSTS	2- 32	1 0/8	+ 1/8	+8.3
O	MANAGEMENT ASSIST	7- 26	8 1/8	+1 3/4	+23.7
O	MINI-COMPUTER SYST.	0- 4	3/8	0	0.0
O	MODULAR COMPUTER SYS	7- 32	7 0/8	+ 1/2	+7.0
O	MOHAWK DATA SCI	10- 32	12	+ 1/2	+4.3
N	NCR	38- 76	64 7/8	+5 1/4	+10.0
N	PERKIN-ELMER	17- 38	18 1/2	+ 3/4	+4.2
N	PRIME COMPUTER INC	16- 48	18 1/8	+1 3/8	+8.2
N	SPERRY CORP	21- 85	22 5/8	+1 3/8	+6.5
O	TANDEM COMPUTERS INC	13- 39	16 7/8	+1 3/8	+10.0
N	TEXAS INSTRUMENTS	71-151	83 3/8	+2 3/8	+2.8
A	WANG LABS	22- 40	26	+1	+4.0

LEASING COMPANIES

EXCH		1981-82 RANGE (1)	CLOSE AUG 18 1982	WEEK NET CHNGE	WEEK PCT CHNGE
O	BOOTHE FINANCIAL CP	16- 29	22 1/4	0	0.0
N	COMDISCO INC	15- 27	17	+1 1/4	+7.9
O	COMMERCE GROUP CORP	1- 1	1/2	- 1/8	-20.0
O	COMPUTER INVSTRS GRP	1- 2	3/8	0	0.0
O	CONTINENTAL INFO SYS	4- 8	7 3/4	- 1/4	-3.1
N	DPF INC	5- 19	8	- 3/8	-4.4
O	ITEL	1- 8	5/8	0	0.0
O	LEASPAC CORP	1- 2	1/8	0	0.0
N	U.S. LEASING	16- 30	25 1/8	+2 1/8	+8.2

EXCH: N=NEW YORK; A=AMERICAN; P=PHIL-BALT-WASH; B=BOSTON
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SOFTWARE & EDP SERVICES

EXCH		1981-82 RANGE (1)	CLOSE AUG 18 1982	WEEK NET CHNGE	WEEK PCT CHNGE
O	ADVANCED COMP TECH	1- 8	1 1/4	- 1/4	-16.6
O	ADVANCED SYSTEMS INC	10- 15	8 3/4	- 1/2	-4.0
O	AGS COMPUTERS INC	7- 10	7 3/4	+ 1/4	+3.3
O	ANACOMP INC	10- 18	10 1/4	+ 1/8	+1.2
O	ANALYSTS INTL CORP	3- 14	7	+ 1/2	+7.6
A	APPLIED DATA RES.	13- 25	23	+1 1/2	+6.9
O	ASK COMPUTER SYSTEMS	11- 17	13 0/8	- 5/8	-4.4
O	ASTRADYNE COMP INC	1- 8	1 1/4	0	0.0
N	AUTOMATIC DATA PROC	21- 32	21 1/4	- 3/4	-3.4
O	CGA COMPUTER ASSOC	4- 23	5 3/4	+ 1/4	+4.5
O	COMPUTER ASSOC INT'L	12- 20	16 1/2	+1	+6.7
O	COMPUTER HORIZONS	1- 3	2 1/2	0	0.0
O	COMPUTER NETWORK	4- 8	6 1/4	+ 1/2	+8.8
N	COMPUTER SCIENCES	11- 30	12 5/4	+1	+8.5
O	COMPUTER TASK GROUP	10- 22	10	0	0.0
O	COMPUTER USAGE	2- 10	2 5/8	0	0.0
O	COMSERV CORP	9- 18	12 1/2	+ 3/4	+6.3
O	COMSHARE	8- 21	5 5/8	- 1/8	-2.1
N	CULLINANE DATABASE	18- 37	20 7/8	+5 1/4	+12.0
O	CYCARE SYSTEMS INC	9- 14	8 1/2	+ 1/2	+6.5
O	DATA DIMENSIONS INC	1- 3	0/8	0	0.0
O	DATATAB	1- 4	0/8	+ 1/8	+25.0
O	DYATRON CORP	2- 11	5 1/2	0	0.0
N	ELECTRONIC DATA SYST	18- 30	27 1/2	+2 1/2	+10.0
O	INFORMATICS INC	10- 23	10	- 1/8	-1.2
O	INSYTE CORP	1- 8	2 1/4	- 1/8	-0.2
O	IPS COMPUTER MARKET.	1- 5	1 1/8	0	0.0
O	KEANE ASSOCIATES	4- 8	4 1/4	0	0.0
A	LOGICON	12- 38	14 1/8	+1 1/8	+8.8
O	MGMT SCI AMER INC	17- 26	21 1/4	+1 1/2	+7.5
O	MATHEMATICA INC	8- 17	13 1/2	+ 1/4	+2.0
O	MATHEMATICAL APP GRP	12- 29	11 1/2	-1 1/2	-11.6
O	NATIONAL DATA CORP	13- 28	14	- 0/4	-5.0
O	PANSOPHIC SYSTEMS	8- 18	10	- 1/4	-2.4
N	PLANNING RESEARCH	5- 12	8 1/4	+ 1/2	+6.8
O	PROGRAMMING & SYS	1- 2	1 3/8	0	0.0
O	REYNOLDS & REYNOLDS	18- 28	18 1/2	0	0.0
O	SEI CORP	17- 28	23 1/4	+1 1/2	+6.8
O	SHARED MEDICAL SYST	20- 37	29 3/4	+1 7/8	+6.7
O	STSC INC	8- 26	10 0/8	+ 1/8	+1.1
O	SCIENTIFIC COMPUTERS	6- 10	7 1/2	+ 7/8	+10.2
O	SOFTWARE AG	5- 23	6	+ 1/2	+8.0
N	TYMSHARE INC	13- 30	17 1/4	+2 1/4	+10.0
N	URS CORP	10- 18	6 7/8	- 1/8	-1.2
N	WYLY CORP	7- 20	9 1/8	+1 1/4	+15.8

PERIPHERALS & SUBSYSTEMS

EXCH		1981-82 RANGE (1)	CLOSE AUG 18 1982	WEEK NET CHNGE	WEEK PCT CHNGE
O	AB INTERNATIONAL	1- 13	1	-	-8.3
A	ANDERSON JACOBSON	6- 26	6 7/8	+ 0/8	+6.7
O	AUTO-TROL TECHNOLOGY	8- 62	8 3/4	0	0.0
O	BANCTEC INC	7- 35	7 1/2	+ 1/2	+7.1
O	BEEHIVE INT'L	4- 18	5 1/2	+ 7/8	+19.8
N	BOLT,BERANEK & NEW	8- 25	14 7/8	+1 0/8	+10.1
O	CAMBEX CORP	2- 8	2	+ 1/4	+14.2
N	CENTRONICS DATA CORP	7- 40	7 1/4	- 1/8	-1.8
N	CETEC CORP	4- 5	4	0	0.0
O	COGNITRONICS	0- 11	2 7/8	- 3/8	-11.5
O	COMPUTER COMMUN.	1- 2	3/4	0	0.0
O	COMPUTER CONSOLES	16- 28	22 3/8	+1 5/8	+7.8
A	COMPUTER DEVICES INC	4- 10	8 1/8	+ 3/4	+8.0
O	COMPUTER TRANSCEIVER	2- 9	4	0	0.0
N	COMPUTERVISION CORP	20- 48	21 3/8	+1	+4.8
A	COMPAC CORP	17- 20	24 5/8	+ 7/8	+3.8
A	DATA ACCESS SYSTEMS	5- 10	1 1/4	- 1/8	-8.0
A	DATAPRODUCTS CORP	16- 44	18 1/2	+2 3/8	+14.7
O	DATARAM CORP	4- 19	8 3/4	+ 1/4	+5.8
O	DATUM INC	2- 5	1 5/8	0	0.0
O	DAVID JAMISON CARLYL	2- 7	2 3/8	+ 1/8	+5.5
O	DECISION DATA COMPUT	0- 8	5 1/2	+ 1/8	+2.3
O	DELTA DATA SYSTEMS	1- 4	1 3/8	0	0.0
A	ELECTRONIC M & R	3- 5	3 1/8	+ 1/8	+3.3
O	EVANS & SUTHERLAND	18- 40	21 1/2	+1 3/4	+8.8
N	GEN'L DATA COMM INC	7- 19	9 7/8	+ 1/8	+1.8
O	GENERAL TERMINAL CP	0- 4	1/4	+	+25.1
O	GREAT SOUTHWEST IND	1- 12	2	0	0.0
N	HAZELTINE CORP	18- 28	20	+1 1/8	+4.6
O	INFORMATION INTL INC	8- 17	12 1/8	+ 3/8	+6.5
O	INTEL CORP	21- 51	30	+1 1/2	+5.2
O	IPL SYSTEMS INC	5- 19	6 1/8	+ 1/8	+2.3
A	LUNDY ELECTRONICS	7- 18	8 3/8	+ 3/8	+4.1
N	MAI DATA CORP	11- 27	15 1/4	+ 1/2	+3.3
O	NETWORK SYSTEMS CORP	14- 29	10 5/8	+1 3/4	+8.7
O	OMEX	3- 8	3 1/2	0	0.0
N	PARADYNE CORP	24- 52	28 1/8	+1 3/4	+6.0
A	PENRIL CORP	7- 17	8 1/8	0	0.0
O	RAMTEK CORP	8- 23	12 1/4	-1 3/4	-12.5
N	RECOGNITION EQUIP	0- 21	4 0/8	+ 3/8	+6.5
O	SCAN DATA	1- 5	1 3/8	0	0.0
N	STORAGE TECHNOLOGY	18- 40	22 5/4	+1 3/8	+6.3
N	SYKES DATATRONICS	8- 34	12 3/4	+1	+8.5
A	T BAR INC	7- 18	8 7/8	- 5/8	-8.7
A	TEC INC	4- 11	8 1/4	- 1/4	-2.0
N	TEKTRONIX INC	38- 76	26 1/7	+ 3/8	+1.4
N	TELEX	5- 10	6 1/8	+ 1/2	+8.5
O	TERADATA SYSTEMS CP	3- 17	7 1/2	+ 1/4	+7.0
A	TIMEPLEX INC	7- 10	8 8/8	+ 1/4	+2.8
O	VISUAL TECHNOLOGY	6- 15	8 1/2	-1 1/2	-13.8
O	WILTEK INC	1- 3	1	0	0.0

SUPPLIES & ACCESSORIES

EXCH		1981-82 RANGE (1)	CLOSE AUG 18 1982	WEEK NET CHNGE	WEEK PCT CHNGE
N	AMERICAN BUS PRODS	11- 17	15	+ 5/8	+6.0
O	BALTIMORE BUS FORMS	1- 2	1 1/4	+ 1/4	+27.4
N	BARRY WRIGHT	14- 24	14 8/4	+ 1/2	+3.5
O	CYBERMATICS INC	1- 2	1	0	0.0
A	DUPLEX PRODUCTS INC	12- 17	13 0/8	0	0.0
N	ENNIS BUS. FORMS	15- 23	20 1/4	+1 3/8	+7.2
N	3M COMPANY	46- 67	55 1/4	+3 8/8	+7.0
O	MOORE CORP LTD	26- 38	30	+1 1/2	+5.2
O	NASHUA CORP	5- 33	8	0	0.0
O	STANDARD REGISTER	30- 45	44 1/2	+5 1/2	+8.0
A	TAB PRODUCTS CO	12- 30	18	+ 3/4	+6.1
N	WALLACE BUS FORMS	22- 36	30 1/2	+1 1/8	+3.8

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Beachwood, OH *September 30*
Cincinnati, OH *September 16*
Columbus, OH *October 13*
Costa Mesa, CA *September 30*
Dallas, TX *October 21*
Dearborn, MI *October 21*
Denver, CO *September 22*
Grand Rapids, MI *October 20*
Greensboro, NC *September 14*
Honolulu, HI *October 27*
Houston, TX *September 30*
Indianapolis, IN *September 8*
Jacksonville, FL *September 28*
Kansas City, MO *October 26*
Miami, FL *October 19*
Milwaukee, WI *September 23*
Nashville, TN *September 23*
Minneapolis, MN *September 28*
New Orleans, LA *September 16*
New York, NY *September 28*
Oak Brook, IL *September 24*, *October 29*
Omaha, NE *October 7*
Philadelphia, PA *September 16*
Phoenix, AZ *October 21*
Pittsburgh, PA *October 12*
Richmond, VA *October 14*
St. Louis, MO *September 15*
Salt Lake City, UT *September 23*
San Diego, CA *September 15*
San Francisco, CA *October 7*
San Jose, CA *October 5*
Santa Monica, CA *September 28*
Seattle, WA *October 12*
Secaucus, NJ *October 28*
Tulsa, OK *October 7*

International Seminars

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Birmingham, England *September 7*
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Calgary, Alberta, CAN *October 8*
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Copenhagen, Denmark *September 22*
Dusseldorf, W. Germany *October 12*
Edmonton, Alberta, CAN *October 7*
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Halifax, Nova Scotia, CAN *September 9*
Helsinki, Finland *October 6*
Jeddah, Saudi Arabia *September 19*
Johannesburg, South Africa *September 27*
London, England *September 9*
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Manchester, England *September 16*
Milan, Italy *October 20*
Montreal, Quebec, CAN *September 17*
Oslo, Norway *September 23*
Ottawa, Ontario, CAN *September 7*
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